ORDER NO. MKE0201800C1

B3

Service Manual

DVD/VCR DECK

PV-D4742

SPECIFICATIONS

ITEM		SPECIFICATION
VCR	Video	Head: 4 rotary heads helical scanning system
		Input Level: VIDEO IN Jack (Phono type) 1.0 Vp-p 75 Ω unbalanced Output Level: VIDEO OUT Jack (Phono type) 1.0 Vp-p 75 Ω unbalanced Signal-to-Noise Ratio: SP: more than 43 dB LP/SLP: more than 41 dB Horizontal Resolution: Color/Monochrome: more: SP: 230 lines LP/SLP: 220 lines
	Audio	Head: Normal Mono: 1 stationary head Hi-Fi Stereo: 2 rotary heads
		Input Level: AUDIO IN Jack (Phono type) -10 dBv 50 kΩ unbalanced Output Level: AUDIO OUT Jack (Phono type) -8 dBv 1 kΩ unbalanced
		Frequency Response: Normal Mono: SP: 100 Hz-8 kHz LP: 100 Hz-6 kHz SLP: 100 Hz-5 kHz Hi-Fi Stereo: SP/LP/SLP: 20 Hz-20 kHz
		Signal-to-Noise Ratio: Normal Mono: SP: more than 42 dB LP/SLP: more than 40 dB Hi-Fi Stereo: SP/LP/SLP: more than 60 dB
		Wow and Flutter: Normal Mono: SP: Less than 0.2 % WRMS LP: Less than 0.3 % WRMS SLP: Less than 0.4 % WRMS Hi-Fi Stereo: Less than 0.015 % WRMS
	Tuner	Broadcast Channels: VHF 2~13, UHF 14~69 CABLE Channels: Midband A through I (14~22) Superband J through W (23~36) Hyperband AA~EEE (37~64) Lowband A-5~A-1 (95~99) Special CABLE channel 5A (01) Ultraband 65~94, 100~125
	Tape Format	Tape width 12.7 mm (1/2 inch) high density tape

ITEM		SPECIFICATION
VCR	RF Out	CH 3/CH 4 switchable 72 dBμ (open voltage) 75 Ω unbalanced
	Tape Speed	SP: 1-5/16 i.p.s (33.35 mm/s), LP: 21/32 i.p.s (16.67 mm/s), SLP: 7/16 i.p.s (11.12 mm/s) Record/Playback Time: 8 hr. with 160 min. type tape used in SLP mode FF/REW Time: Less than 2-1/2 min. (120 min. type tape) *Note: FF/REW Time may be exceed specification according to tape condition.
DVD	Discs Played	(1) DVD-VIDEO disc: 12 cm (5 inch) single-sided, single-layer 12 cm (5 inch) single-sided, double-layer 12 cm (5 inch) double-sided, double-layer (one layer per side) 8 cm (3 inch) single-sided, single-layer 8 cm (3 inch) single-sided, double-layer 8 cm (3 inch) double-sided, double-layer (one layer per side) (2) Compact disc(CD-DA, VIDEO CD): 12 cm (5 inch) disc, 8 cm (3 inch) disc
	Digital Audio Output	Digital optical connector
	Pickup	Wave length: 655 nm (DVD), 790 nm (Video CD/CD) Laser power: CLASS II
GENERAL	Power	Source: 120 V AC±12 V AC, 60 Hz±3 Hz
		Consumption: Approx. 32 W (Power on), Approx. 4 W (Power off)
	Television System	EIA Standard (525 lines, 60 fields) NTSC Color Signal
	Operating Condition	5 °C-40 °C (41 °F-104 °F) (Temperature) 10 %-75 % (Humidity)
	Dimension (W x H x D)	430 mm x 118 mm x 364 mm (16-15/16 inch x 4-5/8 inch x 14-5/16 inch)
	Weight	6.9 kg (15.2 lbs.)

Weight and dimensions shown are approximate.
Designs and specifications are subject to change without notice.

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic®

1. SAFETY PRECAUTIONS

GENERAL GUIDELINES

1. IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Layout, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

2. An Isolation Transformer should always be used during the

servicing of DVD VCR whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks. It will also protect DVD VCR from being damaged by accidental shorting that may occur during servicing.

3. **When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.**
4. **After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.**
5. **After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.**

LEAKAGE CURRENT COLD CHECK

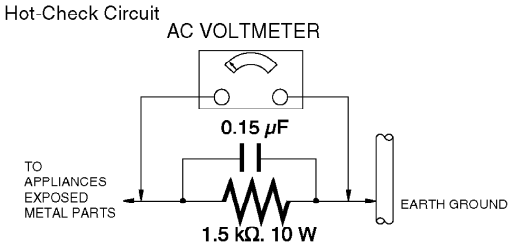
1. **Unplug the AC cord and connect a jumper between the two prongs on the plug.**
2. **Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1 M Ω and 5.2 M Ω . When the exposed metal does not have a return path to the chassis, the reading must be infinity.**

LEAKAGE CURRENT HOT CHECK
(See figure 1.)

1. **Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.**
2. **Connect a 1.5 k Ω , 10 W resistor, in parallel with a 0.15 μ F capacitor, between each exposed metallic part on the set and a good earth ground, as shown in figure 1.**
3. **Use an AC voltmeter, with 1 k Ω /V or more sensitivity, to measure the potential across the resistor.**
4. **Check each exposed metallic part, and measure the voltage at each point.**

5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 V RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks. Leakage current must not exceed 1/ 2 mA. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

Figure 1



1.1. LASER PRODUCT

CLASS I LASER PRODUCT

- This equipment is certified to comply with DHHS Rules 21 CFR Chapter 1, Subchapter J in effect as of date of manufacture. (Only for U.S.A.)

This equipment is classified as a Class I (Class 1) level LASER Product and there is no hazardous LASER radiation with the safety protection.

Caution:

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Danger:

The serviceman should not remove the cover of drive unit and should not service because the drive unit is a non- serviceable parts. Please check that the labels.

Never touch the internal parts in order to avoid EXPOSURE TO VISIBLE LASER RADIATION.
Unplug the AC power cord to the equipment when opening the top cover.
When the power switch is On, do not place your eyes close to the front panel opening door or the other openings to look into the interior unit.
LASER Specification
Class I level A LASER Product (Class 1 level A LASER Product)

Wave Length:

647 - 677 nm (at DVD) / 775 - 815 nm (at CD)

Laser Power:

No hazardous radiation is emitted with the safety protection.

1.2. PRECAUTION OF LASER DIODE

CAUTION:

This unit utilizes a class III a laser. Visible laser radiation is emitted from the optical pickup lens when the unit is turned on:

1. **Do not look directly into the pickup lens.**
2. **Do not use optical instruments to look at the pickup lens.**
3. **Do not adjust the preset variable resistor on the optical pickup.**
4. **Do not disassemble the optical pickup unit.**
5. **If the optical pickup is replaced, use the manufactures specified replacement pickup only.**
6. **Use of control or adjustment or performance of procedures other than those specified herein may result in hazardous radiation exposure.**

2. PREVENTION OF ELECTRO-STATIC DISCHARGE (ESD) TO ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits, some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electrostatic discharge (ESD).

1. **Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should remove electrostatic charge for potential shock reasons prior to applying power to the unit under test.**
2. **After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.**
3. **Use only a grounded-tip soldering iron to solder or unsolder ES**

devices.

4. Use only an antistatic solder removal device. Some solder removal devices not classified as "antistatic (ESD protected)" can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
   CAUTION: Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

"NOTE to CATV system installer:
This reminder is provided to call the CATV system installer's attention to Article 820-22 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical."

3. OPERATION GUIDE

4. SERVICE NOTES (PLEASE READ)

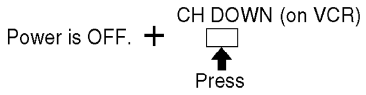
4.1. SERVICE NOTES

4.1.1. SIMPLIFIED FAULT FINDING DATA

Simplified Self-Diagnostic System facilitates finding the cause of the fault. A 3-digit fault code will be displayed in F.I.P.
The Simplified Fault finding data is stored in the Memory IC (IC6005). This data is cleared after it is displayed, and then the POWER button is pressed back on.

1. With power turned off, press CH DOWN button on VCR (for over 3 seconds if VCR is not in shut off condition).

Fig. 1-1



2. Fault code (3-digit number) will be displayed in F.I.P. as shown.

Fig. 1-2

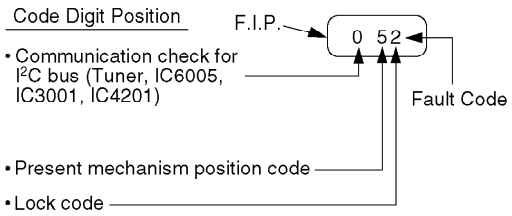


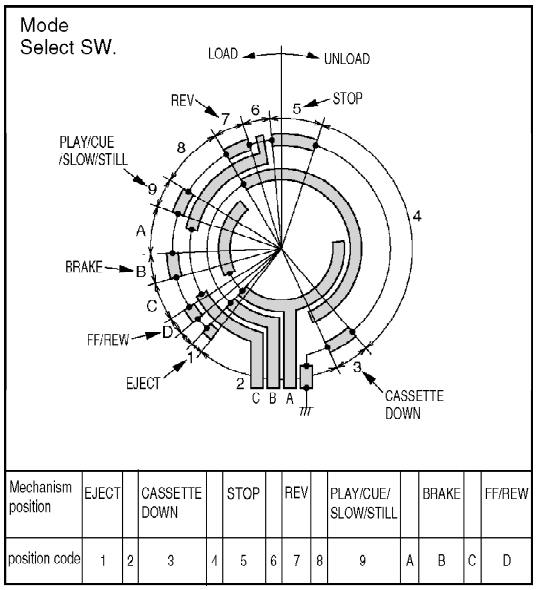
Fig. 1-3

Explanation of Codes	Code No.		
Communication check for I²C bus (Tuner, IC6005, IC3001, IC4201) (Refer to Fig. 1-4.)	0 ~ F		
Present Mechanism Position Code Mechanism Position is indicated. (Refer to Fig. 1-5.)		1 2 3 4 5 6 7 8 9 A B C D	
Lock Code (See Note) • VCR is not in shut-off condition. • Reel lock. • Cylinder lock. • Exceeds loading/unloading time. (Mechanism Lock) • Exceeds Cassette loading/unloading time. (Cassette Lock)			0 1 2 3 4

Fig. 1-4

Communication check for I²C bus (IC6001◄►Tuner)	Communication check for I²C bus (IC6001◄►IC6005)	Communication check for I²C bus (IC6001◄►IC3001)	Communication check for I²C bus (IC6001◄►IC4201)	Code No.
OK	OK	OK	OK	0
			NG	1
		NG	OK	2
			NG	3
	NG	OK	OK	4
			NG	5
		NG	OK	6
			NG	7
NG	OK	OK	OK	8
			NG	9
		NG	OK	A
			NG	b
	NG	OK	OK	C
			NG	d
		NG	OK	E
			NG	F

Fig. 1-5



Mechanism position	EJECT		CASSETTE DOWN		STOP		REV		PLAY/CUE/ SLOW/STILL		BRAKE		FF/REW
position code	1	2	3	4	5	6	7	8	9	A	B	C	D

3. When 1 to 4 listed in Lock code occurs, Lock data will be stored in the Memory IC (latest Lock data only).

Note:

1. Lock data will be kept after the AC Cord is unplugged.

2. When 1 to 4 listed in Lock code occurs for the first time, the VCR does not go into VCR shut-off condition. If it occurs again within a minute, the VCR goes into VCR shut-off condition. Then, the VCR stops and all VCR function buttons except for power become non-operational.

3. Lock data will be cleared at the first power on operation after Lock code is displayed in FIP.

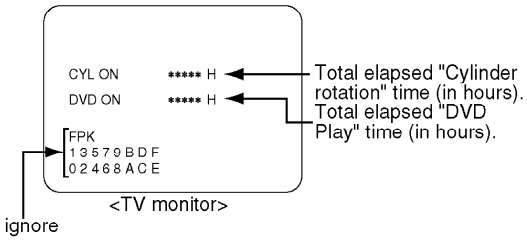
4.1.2. USAGE SCREEN MODE

Function displayed on the TV monitor:

- the total elapsed "Cylinder rotation" time (in hours)
- the total elapsed "DVD Play" time (in hours)

1. With power turned and no cassette, press CH DOWN button on VCR and 7 key on remote together.
(The USAGE SCREEN will be displayed on the TV Monitor.)

Fig. 2


CYL ON ***** H
DVD ON ***** H
FPK
1 3 5 7 9 B D F
0 2 4 6 8 A C E
<TV monitor>
ignore
Total elapsed "Cylinder rotation" time (in hours).
Total elapsed "DVD Play" time (in hours).

Note:

1. **After replacing the Cylinder Unit, press COUNTER RESET button on remote in this mode. Only Total elapsed "Cylinder rotation" time (in hours) will be cleared to 0.**
2. **To release from Usage Screen Mode, press any operation button on VCR or insert a cassette tape in this mode. The VCR will return to normal operation mode.**

4.1.3. EEPROM IC (IC6005), MAIN C.B.A. REPLACEMENT NOTE

After replacing EEPROM IC (IC6005) or Main C.B.A., be sure to perform the "PG SHIFTER ADJUSTMENT" in ELECTRICAL ADJUSTMENT procedures.

4.1.4. GROUNDING FOR ELECTROSTATIC BREAKDOWN

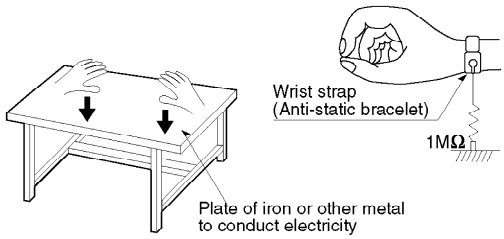
Prevention

1. **Human body grounding**
   Use the antistatic wrist strap to discharge the static electricity from your body.
2. **Work table grounding**
   Put a conductive material (sheet) or steel sheet on the area where the optical pickup is placed and ground the sheet.

Caution:

The static electricity of your clothes will not be grounded through the wrist strap. So take care not to let your clothes touch the optical pickup.

Fig. 3



4.1.5. DVD DECODER C.B.A. REPLACEMENT NOTE

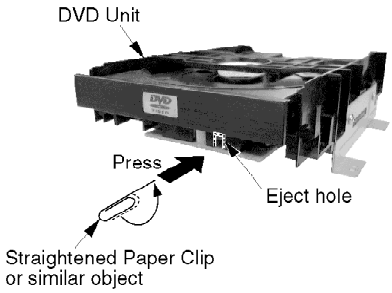
After replacing the DVD Decoder C.B.A. or EEPROM IC (IC8001), confirm the Firmware version

of DVD using Self-Diagnostic function. If the version is different than that indicated on the Firmware Disc, update it using the Firmware Disc. Refer to "HOW TO UPDATE THE FIRMWARE OF DVD."

4.1.6. METHOD FOR EJECTING THE DVD TRAY MANUALLY

1. **Insert a Straightened Paper Clip or similar object into the Eject hole.**
2. **Press it gently, and then pull the Tray fully out.**

Fig. 4



4.1.7. SELF-DIAGNOSTIC TEST FUNCTION FOR DVD UNIT

This unit has a Self-Diagnostic function which detects a problem or malfunction within the unit and displays its corresponding Error code on the TV Screen.

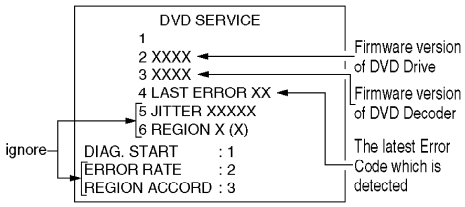
Note:

If, after approx. 30 seconds, a unit set to DVD mode automatically switches to VCR mode, there is likely a problem with the DVD Decoder C.B.A. (IC8000, IC8100, IC8200, etc.)

How to enter DVD Self-Diagnostic mode

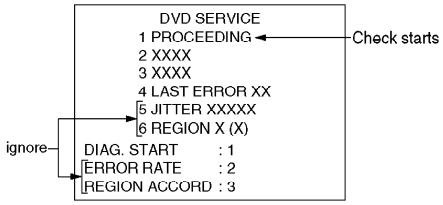
1. **Connect a TV Monitor.**
2. **Insert a DVD disc into the DVD Unit.**
3. **Set the unit to DVD mode. Then, press STOP button to stop playback.**
   Note:
   Do not let a DVD play during DVD Self-Diagnostic mode.
4. **Press and hold STOP button on the VCR and 9 key on the remote together with no cassette inserted. The unit will enter the DVD Self -Diagnostic mode.**

Fig. 5-1



5. Press "1" key on the remote control. The DVD Self-Diagnostic Test function will start automatically.

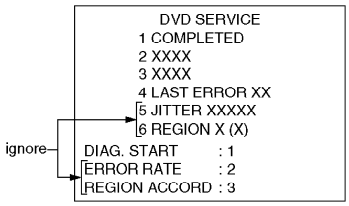
Fig. 5-2



6. After a few minutes (approx. 1~5 minutes), the check results will appear on the TV screen.

- If no error is detected, "COMPLETED" will appear as shown in Fig. 5-3. Be sure to press Power OFF to end. Then, press Power ON again and remove the DVD disc from the Tray.

Fig. 5-3



- If some error is detected, a 2-digit for Error Code will appear as shown in Fig. 5-4.

Fig. 5-4

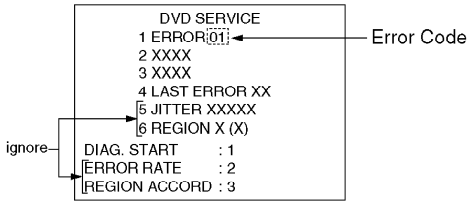


Fig. 5-5

Error Code

Error Code	Explanation of cause
00	No Error
10	Loading Error
30	Ultra DMA (Direct Memory Access) CRC Error
40	Spindle Motor Error
50	Traverse Motor Error
60	Servo Error
70	Recovery Error

4.1.8. HOW TO UPDATE THE FIRMWARE OF DVD

It is possible to update the firmware version of the DVD Drive and the DVD Decoder using each Firmware Disc for DVD Drive and DVD Decoder.

How to update the firmware of DVD Drive:

1. **Confirm the firmware version of DVD Drive. Refer to "SELF-DIAGNOSTIC TEST FUNCTION FOR DVD UNIT."**
2. **Set the unit to DVD mode.**
3. **Press OPEN/CLOSE button to open the tray. Then, place the Firmware Disc for DVD Drive in the tray.**
4. **Close the tray. Updating will begin automatically.**
5. **After approx. 1 minute, the tray will open automatically.**
   Note:
   If the tray has still not opened after 3 minutes or Error Indication appears, updating was unsuccessful. In this case, repeat above steps from step 1.
6. **Remove the Firmware Disc from the tray. Then, disconnect the AC Plug. (The tray will not close.)**
7. **Connect the AC Plug and turn on the power. Then, reset all VCR memory. Refer to "HOW TO RESET ALL MEMORY FUNCTIONS."**

How to update the firmware of DVD Decoder:

1. **Confirm the firmware version of DVD Decoder. Refer to "SELF-DIAGNOSTIC TEST FUNCTION FOR DVD UNIT."**
2. **Set the unit to DVD mode.**
3. **Press OPEN/CLOSE button to open the tray. Then, place the Firmware Disc for DVD Decoder in the tray.**
4. **Close the tray. Updating will begin automatically.**
5. **After approx. 1 minute, the tray will open automatically.**
   Note:

If the tray has still not opened after 3 minutes or Error Indication appears, updating was unsuccessful. In this case, repeat above steps from step 1.

6. Remove the Firmware Disc from the tray. Then, disconnect the AC Plug. (The tray will not close.)
7. Connect the AC Plug and turn on the power. Then, reset all VCR memory. Refer to "HOW TO RESET ALL MEMORY FUNCTIONS."

CAUTION:

1. Do not unplug the AC Cord during updating.
2. Do not press any buttons during updating.

4.1.9. SERVICE POSITION

4.1.9.1. Service Position

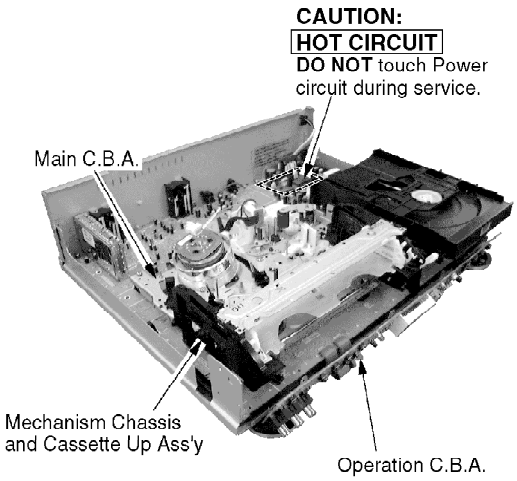
Service Position	Purpose
Service Position (1)	Mechanism check Mechanical adjustment Electrical adjustment
Service Position (2)	Main C.B.A. check
Service Position (3)	DVD Decoder C.B.A. check

CAUTION:

HOT CIRCUIT (Primary circuit) exists on the Main C.B.A.
Use extreme care to prevent accidental shock when servicing.

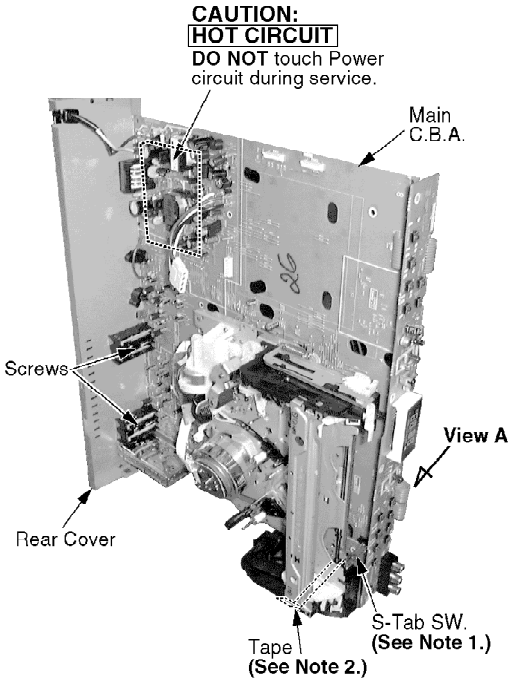
4.1.9.1.1. Service Position (1)

Fig. 7-1



4.1.9.1.2. Service Position (2)

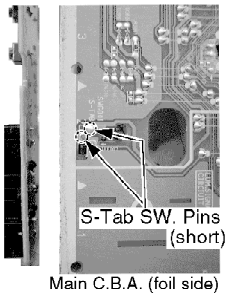
Fig. 7-2-1



Note:

1. **It is possible that the S-Tab SW. may not work correctly in Service Position (2). (Recording can not be done). In this case, short the S-Tab SW. Pins on the foil side of the Main C.B.A. to turn this SW. on.**

Fig. 7-2-2



Alternative method:
Cover the S-Tab SW. with masking tape.

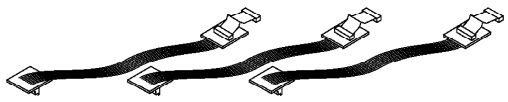
2. **Place the tape between the Cassette Up Ass'y and Main C.B.A. to get a stability.**

4.1.9.1.3. Service Position (3)

In Service Position (3), the DVD Decoder C.B.A. with Extension Cable (LSUA0034) X3 and Connector Cable (IDE Cable) (Not supplied) can be performed.

Fig. 7-3-1

Extension Cable (LSUA0034) 3pcs

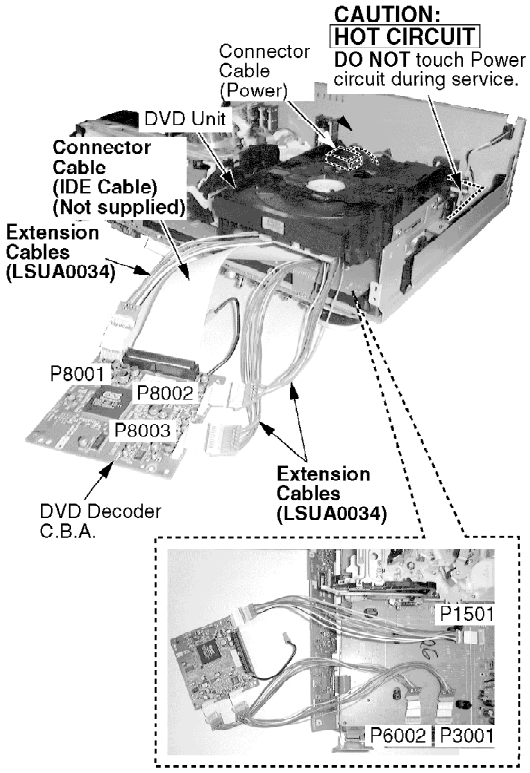


Connector Cable (IDE Cable) Not supplied (Purchase locally)

1. **Remove the DVD Unit and the DVD Decoder C.B.A.**
   Note:
   Remove the original Connector Cable (IDE) from the DVD Unit. (The original Connector Cable (IDE) is not used in this position.)
2. **Connect the Connector Cable (Power) and the Connector Cable (IDE) to the DVD Unit from the DVD Decoder C.B.A.**
3. **Connect the 3 Extension Cables as follows:**

   - With Extension Cable (LSUA0034): P8001 on the DVD Decoder C.B.A. to P1501 on the Power Supply C.B.A.
   - With Extension Cable (LSUA0034): P8002 on the DVD Decoder C.B.A. to P3001 on the Main C.B.A.
   - With Extension Cable (LSUA0034): P8003 on the DVD Decoder C.B.A. to P6002 on the Main C.B.A.
4. **Place the DVD Unit and DVD Decoder C.B.A. as shown.**

Fig. 7-3-2



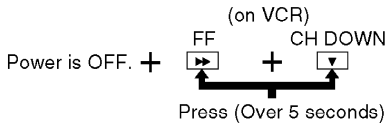
4.1.10. HOT CIRCUIT

Primary circuit exists on the Main C.B.A.
This circuit is identified as "HOT" on the C.B.A. and in the Service Manual. Use extreme care to prevent accidental shock when servicing.

4.1.11. SERVICE MODE

In order to inhibit detection of the Supply & Takeup Photo Transistors, Reel Sensor, and Cylinder Lock, press and hold FF button and CH DOWN buttons on VCR together over 5 seconds in power off condition.

Fig. 8-1

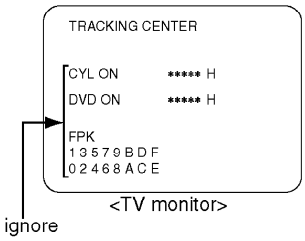


The power comes on and the unit goes into service mode.
In this mode, Mechanism movement can be confirmed. When removing Cassette Up Ass'y, it can be confirmed without a cassette.
To release from this mode, press POWER button off or disconnect AC Plug.

4.1.12. TRACKING CENTER MODE (TRACKING FIX AT CENTER)

Insert the Cassette tape. Set the unit into Service Mode. Play back the Cassette tape. Press PLAY button in Play back mode. "TRACKING CENTER" will be displayed on the TV monitor. In this mode, the tracking is fixed at center. (Auto tracking and manual tracking functions are not operational.)

Fig. 8-2



To release from this mode, press PLAY or STOP button.

4.1.13. CAUTION FOR INSTALLATION OF FRONT PANEL ASS'Y

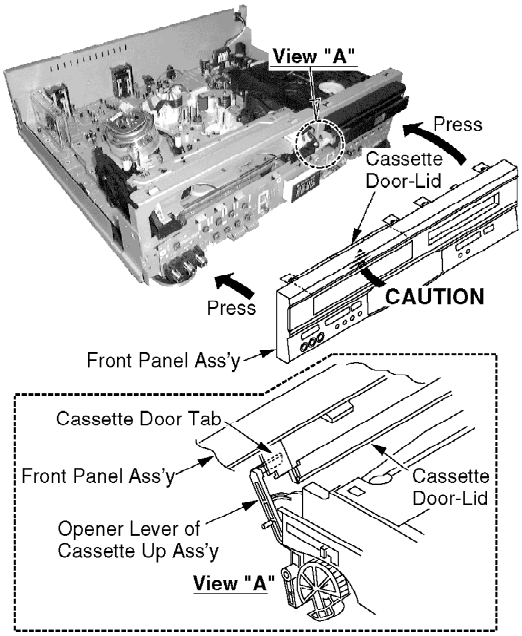
CAUTION:

Opener Lever may be damaged when Front Panel Ass'y is installed, with Cassette Door-Lid of Front Panel Ass'y and Opener Lever of Cassette Up Ass'y set incorrectly.

Install the Front Panel Ass'y as follows:

1. **Swing the Cassette Door-Lid all the way open until the Cassette Door tab clears the Opener Lever.**
2. **Make sure that all locking tabs are aligned properly. Then, press the Front Panel straight in.**

Fig. 9



4.1.14. METHOD FOR LOADING/UNLOADING OF MECHANISM

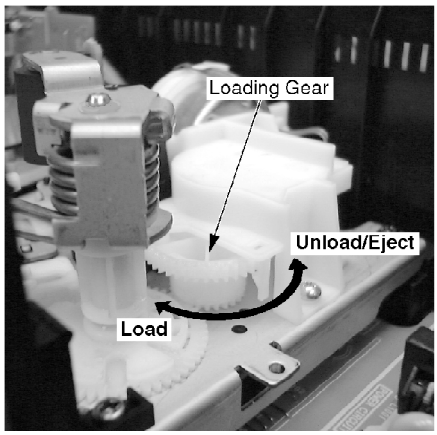
4.1.14.1. (Manual Method)

Turn the Loading Gear clockwise (for loading) or counterclockwise (for unloading) using needlenose pliers etc.

Note:

Do not use this method if Mechanism is jammed or locked.

Fig. 10-1



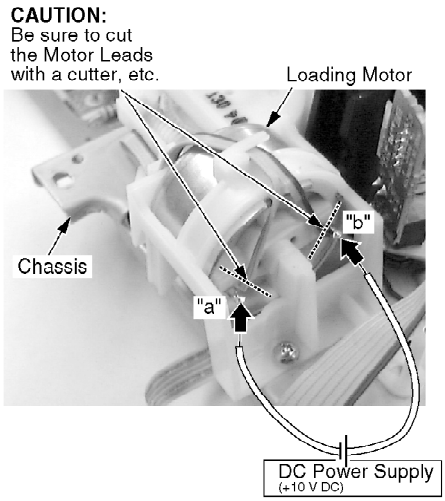
4.1.14.2. (Electrical Method)

Apply +10.0 V DC Power Supply to the Loading Motor terminals.
Loading
DC + to Portion "a," DC - to Portion "b"
Unloading
DC - to Portion "a," DC + to Portion "b"

CAUTION:

Before applying DC Power Supply, be sure to cut the Motor Leads with a cutter, etc.
Otherwise, the Loading Motor Drive IC (IC2501) may be damaged.

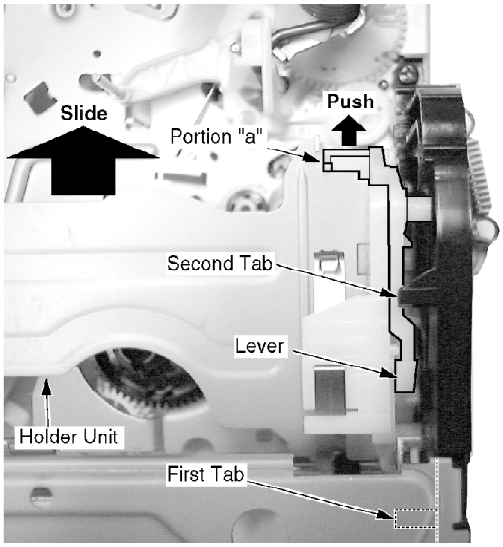
Fig. 10-2



4.1.14.2.1. WHEN LOADING WITHOUT A CASSETTE

When loading without a cassette, push Portion "a" on the Holder Unit of Cassette Up Ass'y so that the Lever clear the First Tab and Second Tab.

Fig. 10-3



4.1.15. HOW TO REMOVE A JAMMED TAPE

CAUTION:

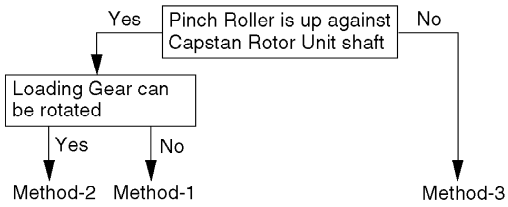
Wiper Arm Unit may be damaged or its spring may be out of place when the jammed tape is removed by force.

Remove a jammed tape as follows:

4.1.15.1. Manual Method

When a tape jam is encountered, check the tape loading condition and use the following procedure to remove a tape jam.

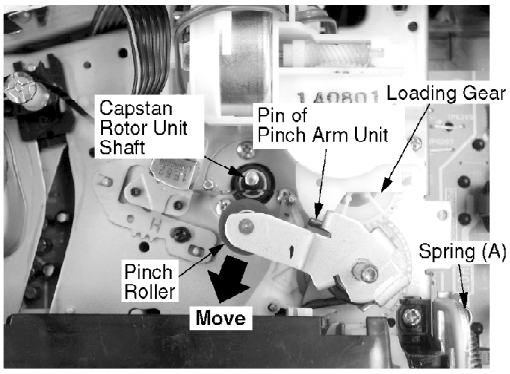
Fig. 11-1



Method -1:

1. **Move the Pinch Roller Unit out by unhooking the Pin of Pinch Arm Unit so that the Pinch Roller is separated from the Capstan Rotor Unit shaft.**

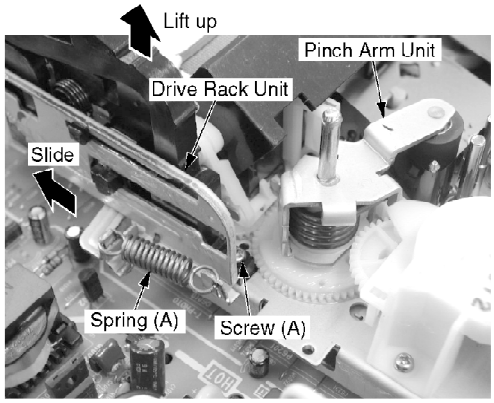
Fig. 11-2



Top View

2. Remove the tape from the tape path.
3. Rewind the tape into the cassette by rotating the Center Clutch Unit counterclockwise.
4. Unhook Spring (A) of the Drive Rack Arm.
5. Remove Screw (A).
6. Lift the Cassette Up Ass'y. While pulling the Cassette Up Ass'y out far enough so that it clears the Drive Rack Arm, slide the Drive Rack Unit as indicated by the arrow to remove the cassette tape from the Cassette Up Ass'y.
7. Check the cause of mechanical trouble and repair.

Fig. 11-3



Method -2:

1. Rotate Loading Motor counterclockwise with needlenose pliers, etc. so that the Pinch Roller is separated from the shaft of the Capstan Rotor Unit.
2. Perform Step 2 through Step 7 of Method -1.

Method -3:

1. Perform Step 2 through Step 7 of Method -1.

Note:

After repairing mechanical trouble, make sure that all gear alignments are correct, especially the Wiper Arm Unit and Drive Rack Unit of Cassette Up Ass'y. (Refer to "EJECT Position Confirmation" in DISASSEMBLY/ASSEMBLY PROCEDURES.)

4.1.15.2. Electrical Method

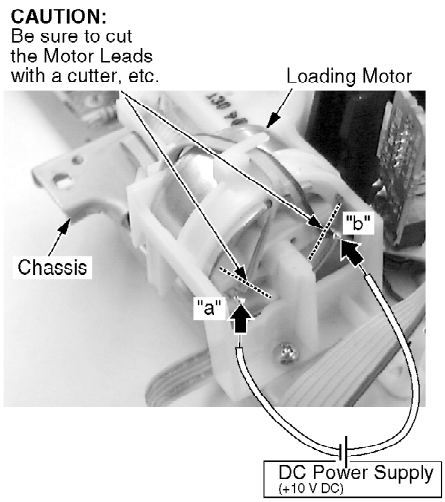
Electrical method can only be performed when the mechanism is moved by rotating the Loading Gear.

CAUTION:

1. **Before applying DC Power Supply, be sure to cut the Motor Leads with a cutter, etc.**
   Otherwise, the Loading Motor Drive IC (IC2501) may be damaged.
2. **If loading does not start in approx. 2 seconds after DC Power Supply is applied, DO NOT continue to apply DC Power Supply. Instead, perform "Manual Method."**

1. **Be sure to cut the Motor Leads with a cutter, etc.**
2. **Apply +10.0 V DC Power Supply to the Loading Motor terminals.**
3. **When the Loading Posts reach the fully unloaded position, remove the Power Supply.**

Fig. 12



4. **Rewind the tape into the cassette by turning the Center Clutch Unit counterclockwise.**
5. **Eject the cassette by applying +10.0 V DC Power Supply again.**

4.1.16. BLACK SCREWS ON THE CHASSIS

Black Screws are used on the Mechanism Chassis to identify screws that require adjustment.

4.1.17. HOW TO RESET ALL MEMORY FUNCTIONS

To reset (clear) the select language, channel auto set and set clock functions to their initial power on condition (power on, no cassette inserted), hold down the PLAY and CH UP buttons on the unit together for more than 5 seconds.
Power will shut off.

4.1.18. HOW TO CONFIRM AUTO CLOCK SET FEATURE

1. **Connect an RF cable from the output of one unit to the input of the test unit.**
2. **Select corresponding RF channels.**
3. **Playback a recording of P.B.S. channel including clock set data and confirm this feature.**

4.1.19. VARIABLE VOLTAGE ISOLATION TRANSFORMER

An Isolation Transformer should always be used during the servicing of DVD VCR whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks. It will also protect DVD VCR from being damaged by accidental shorting that may occur during servicing.
Also, when troubleshooting the above type of Power Supply Circuit, a variable isolation transformer is required in order to increase the input voltage slowly.

4.1.20. SPECIAL NOTE

All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" section of this service manual.

5. DISASSEMBLY/ASSEMBLY PROCEDURES

5.1. CABINET SECTION

5.1.1. Disassembly Flowchart

Perform all disassembly procedures in the order described in the "Disassembly Flowchart" shown below. When reassembling, use the reverse procedure.

CAUTION:

Disconnect AC plug before disassembly.

Fig. D1

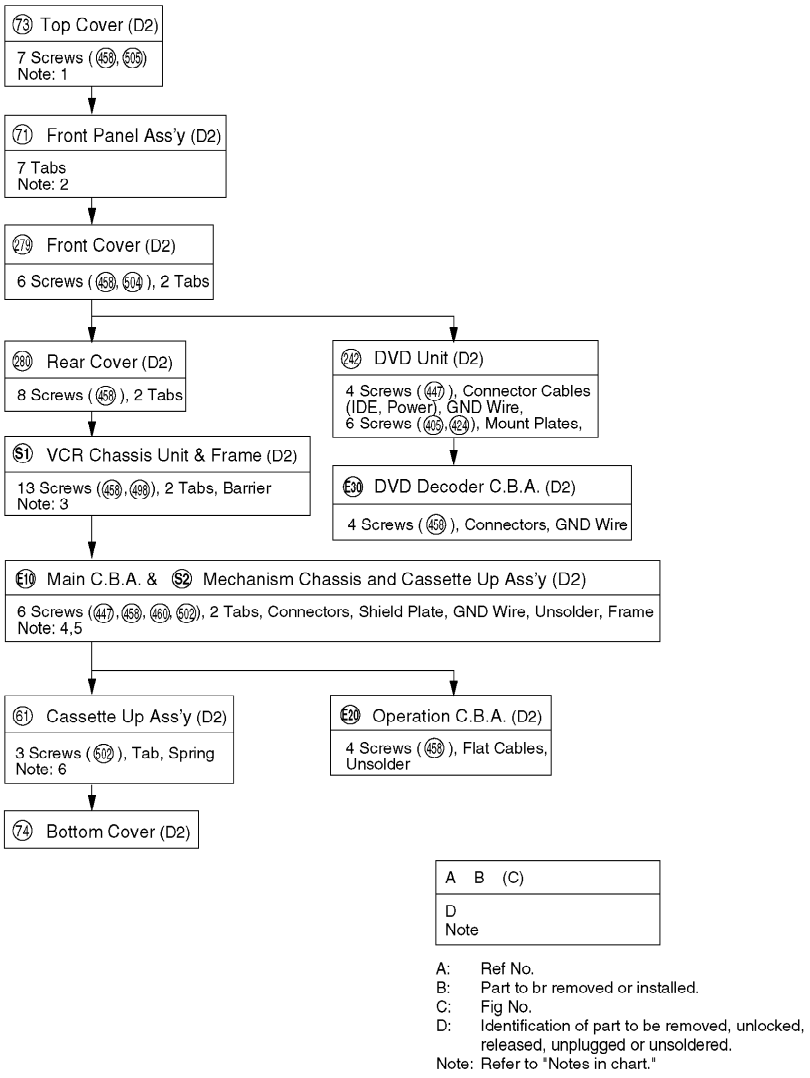
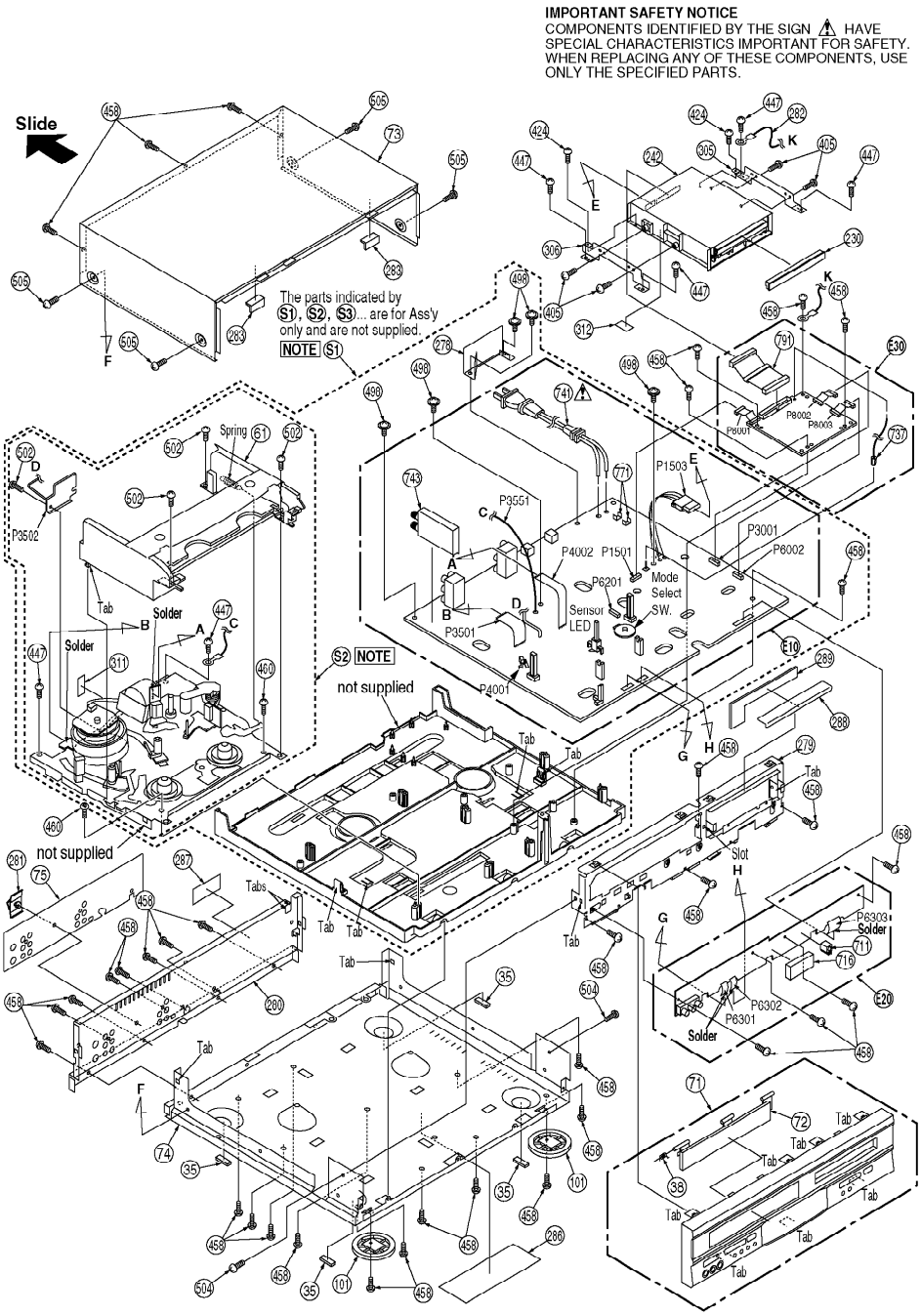

73 Top Cover (D2)
7 Screws (458, 505)
Note: 1
71 Front Panel Ass'y (D2)
7 Tabs
Note: 2
279 Front Cover (D2)
6 Screws (458, 504), 2 Tabs
280 Rear Cover (D2)
8 Screws (458), 2 Tabs
242 DVD Unit (D2)
4 Screws (447), Connector Cables (IDE, Power), GND Wire,
6 Screws (405, 424), Mount Plates,
S1 VCR Chassis Unit & Frame (D2)
13 Screws (458, 498), 2 Tabs, Barrier
Note: 3
E30 DVD Decoder C.B.A. (D2)
4 Screws (458), Connectors, GND Wire
E10 Main C.B.A. & S2 Mechanism Chassis and Cassette Up Ass'y (D2)
6 Screws (447, 458, 460, 502), 2 Tabs, Connectors, Shield Plate, GND Wire, Unsolder, Frame
Note: 4,5
61 Cassette Up Ass'y (D2)
3 Screws (502), Tab, Spring
Note: 6
E20 Operation C.B.A. (D2)
4 Screws (458), Flat Cables, Unsolder
74 Bottom Cover (D2)
A B (C)
D
Note
A: Ref No.
B: Part to br removed or installed.
C: Fig No.
D: Identification of part to be removed, unlocked, released, unplugged or unsoldered.
Note: Refer to "Notes in chart."

Fig. D2



5.1.1.1. Notes in chart

1. Removal of Top Cover

When removing the Top Cover, slide it as indicated by the arrow.

2. Installation of Front Panel Ass'y

CAUTION:

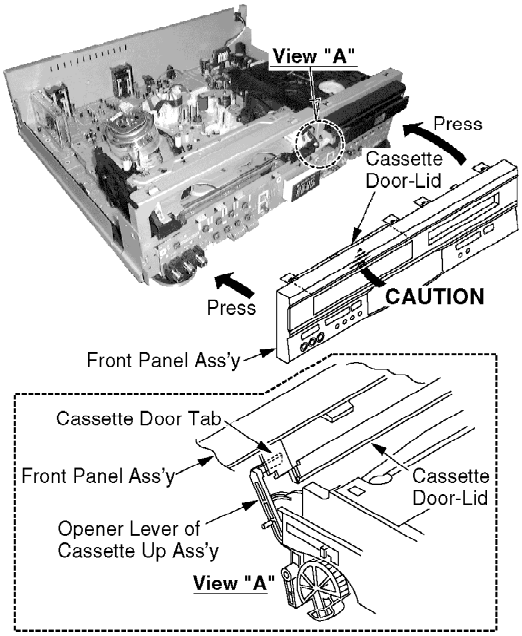
Opener Lever may be damaged when Front Panel Ass'y is installed, with Cassette Door-Lid of Front Panel Ass'y and Opener

Lever of Cassette Up Ass'y set incorrectly.

A. When installing the Front Panel Ass'y, swing the Cassette Door-Lid all the way open until the Cassette Door tab clears the Opener Lever.

B. Make sure that all locking tabs are aligned properly. Then, press the Front Panel straight in.

Fig. D3



3. Removal of VCR Chassis Unit & Frame

When removing the VCR Chassis Unit & Frame, push the 2 Locking Tabs to release. Then, slide the VCR Chassis Unit & Frame to front side.

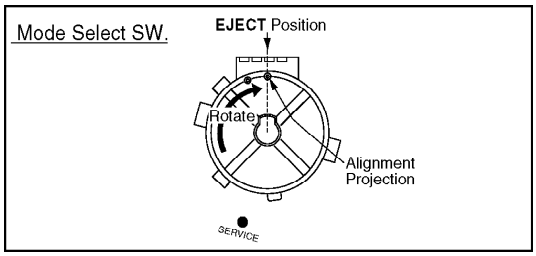
Installation of VCR Chassis Unit

When installing 2 Screws (460), slide the Holder Unit of the Cassette Up Ass'y (Refer to "WHEN LOADING WITHOUT A CASSETTE" in Service Notes) to tighten screws. Then, slide it back to the EJECT Position.

4. Installation of Mechanism Chassis and Cassette Up Ass'y onto Main C.B.A.

A. Make sure the Mode Select SW. on the Main C.B.A. is in EJECT position. If not, rotate the Mode Select SW. until the alignment projection is in the EJECT Position.

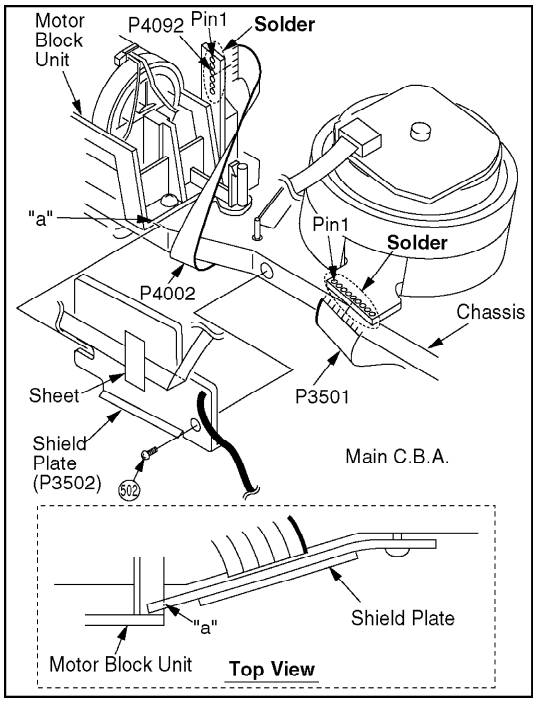
Fig. D4



B. Install the Mechanism Chassis and Cassette Up Ass'y straight onto the Main C.B.A. so that the Sensor LED clears the hole in the Mechanism Chassis and that 2 Connectors (P4001, P6201) are aligned and seated securely.

5. Flat Cable solder points on the Cylinder and AC Head
Solder the Flat Cables. Then, install the Shield Plate as shown.

Fig. D5



6. Installation of Cassette Up Ass'y

A. Confirm that the Locking Tab under the Cassette Up Ass'y is in Hole on the Mechanism Chassis when installing the Cassette Up Ass'y. Then, slide the Cassette Up Ass'y towards the back.

B. When installing 2 Screws (502), slide the Holder Unit (Refer to "WHEN LOADING WITHOUT A CASSETTE" in Service Notes) to tighten screws. Then, slide it back to the EJECT Position.

C. Hook Spring to the Drive Rack Arm on the Mechanism Chassis.

5.2. MECHANISM SECTION

5.2.1. Disassembly/Reassembly Method

This procedure starts with the condition that the cabinet parts and Main C.B.A. have been removed.
When reassembling, perform the step(s) in the reverse order.
Perform all disassembly/reassembly and alignments procedures in EJECT Position.

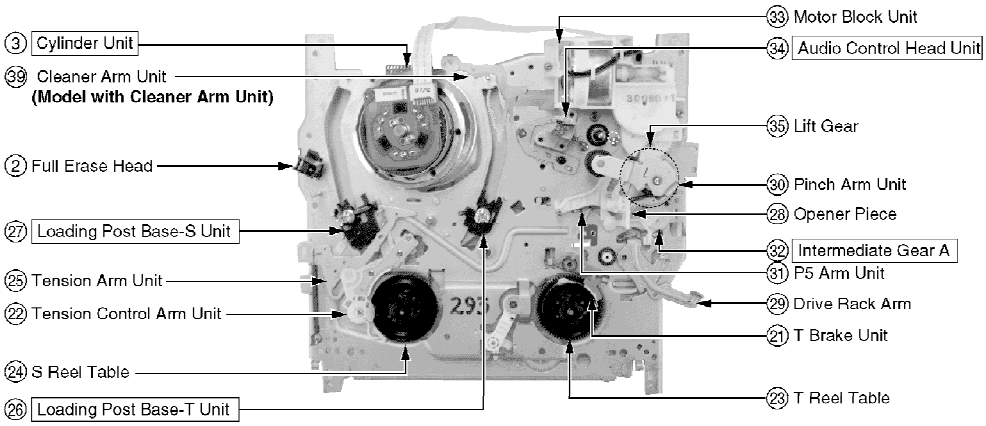
Step/Loc. No.	Prior Step(s)	Part	Fig. No.	Remove	Alignment/Adjustment
①	----------	Not used	-	-	
②	----------	Full Erase Head	J2	(L-1)	
③	1	Cylinder Unit	J2	3(S-3), Flexible Cable	TAPE INTERCHANGEABILITY Adjustment
④	----------	Capstan Belt	J3-1	-	
⑤	----------	Support Angle	J3-1	(S-4), (S-5)	
⑥	5	Intermediate Gear B	J3-1	(L-2)	Gear Alignment
⑦	4,5,6	Main Cam Gear	J3-1	Main Cam Push Nut	Gear Alignment
⑧	4	Center Clutch Unit	J4-1	(W-1)	
⑨	4,8	Changing Gear Spring	J4-1	-	
⑩	4,8,9	Changing Gear	J4-1	-	
⑪	4,8,9,10	Idler Arm Unit	J4-1	-	
⑫	----------	Reel Gear	J5-1	2(L-3)	
⑬	4,5,6,7,8,9,10	Main Rod	J5-1	(W-2), (L-4)	Gear Alignment
⑭	----------	Not used	-	-	
⑮	1	Capstan Motor Unit	J6	3(S-6), Unsolder	
⑯	----------	Not used	-	-	
⑰	----------	Not used	-	-	
⑱	----------	Not used	-	-	
⑲	4,8,9,10,13	T Loading Arm Unit	J7-1	-	Gear Alignment
⑳	4,5,6,7,8,9,10,13,19	S Loading Arm Unit	J7-1	-	Gear Alignment
㉑	----------	T Brake Unit	J8-1	-	
㉒	----------	Tension Control Arm Unit	J8-1	3(L-5)	
㉓	21	T Reel Table	J8-1	-	
㉔	22	S Reel Table	J8-1	-	
㉕	22	Tension Arm Unit	J8-1	2(L-6), (P-1), (P-2)	
㉖	22,25	Loading Post Base-T Unit	J9	-	P2 AND P3 POST HEIGHT, TAPE INTERCHANGEABILITY Adjustment
㉗	22,25	Loading Post Base-S Unit	J9	-	
㉘	----------	Opener Piece	J10-1	2(L-7)	
㉙	4,5,6,7	Drive Rack Arm	J10-1	-	
㉚	28	Pinch Arm Unit	J10-1	-	
㉛	28,30	P5 Arm Unit	J10-1	(W-3)	
㉜	5,6,28	Intermediate Gear A	J10-1	-	Gear Alignment
㉝	----------	Motor Block Unit	J11	2(S-9)	
㉞	----------	Audio Control Head Unit	J11	(S-10)	TAPE INTERCHANGEABILITY Adjustment
㉟	5,6,28,30,32,33	Lift Gear	J11	-	
㊱	----------	Not used	-	-	
㊲	22,25	Tension Arm Boss	J11	(L-8)	
㊳	----------	SS Brake Arm Unit	J5-1	(L-9), (P-3)	
㊴	----------	Cleaner Arm Unit **(Model with Cleaner Arm Unit)**	J11	(L-10)	

5.2.2. Inner Parts Location

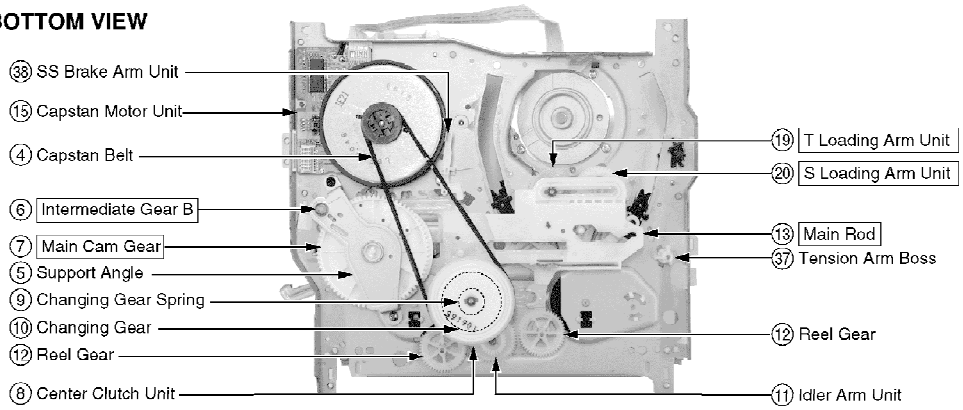
Note: BOX indicates alignment (Gear Alignment or Mechanical Adjustment) required when a part is replaced.

Fig. J1-1

TOP VIEW


③ Cylinder Unit
㊴ Cleaner Arm Unit
(Model with Cleaner Arm Unit)
② Full Erase Head
㉗ Loading Post Base-S Unit
㉕ Tension Arm Unit
㉒ Tension Control Arm Unit
㉔ S Reel Table
㉖ Loading Post Base-T Unit
㉝ Motor Block Unit
㉞ Audio Control Head Unit
㉟ Lift Gear
㉚ Pinch Arm Unit
㉘ Opener Piece
㉜ Intermediate Gear A
㉛ P5 Arm Unit
㉙ Drive Rack Arm
㉑ T Brake Unit
㉓ T Reel Table

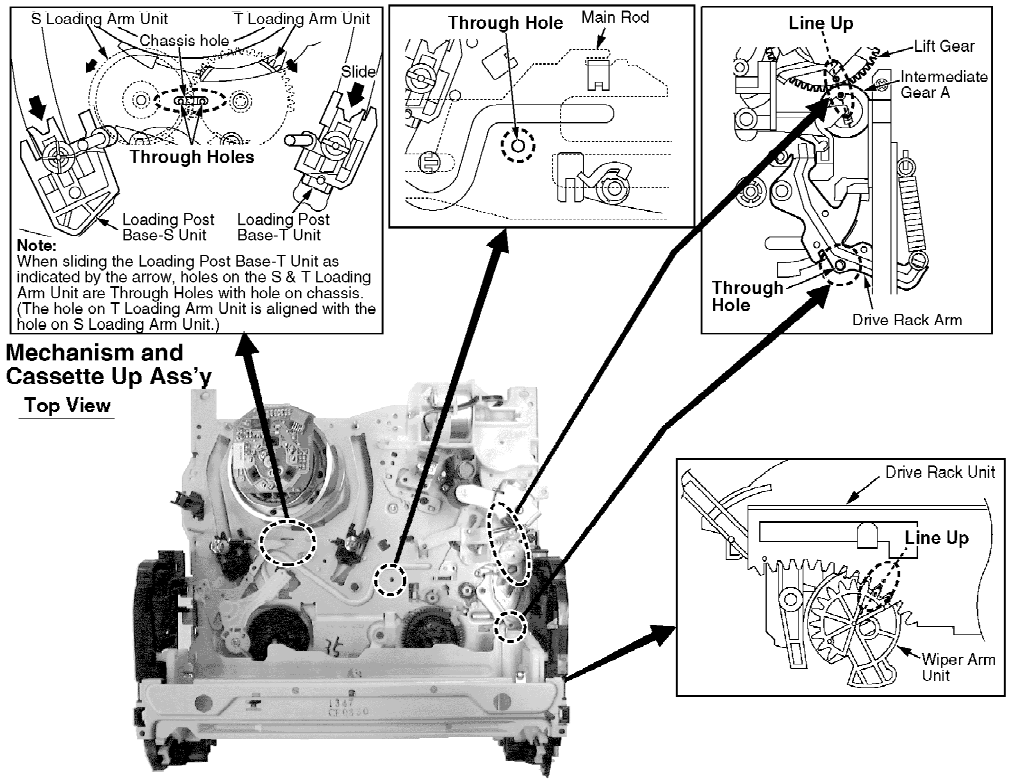
BOTTOM VIEW



5.2.3. EJECT Position Confirmation

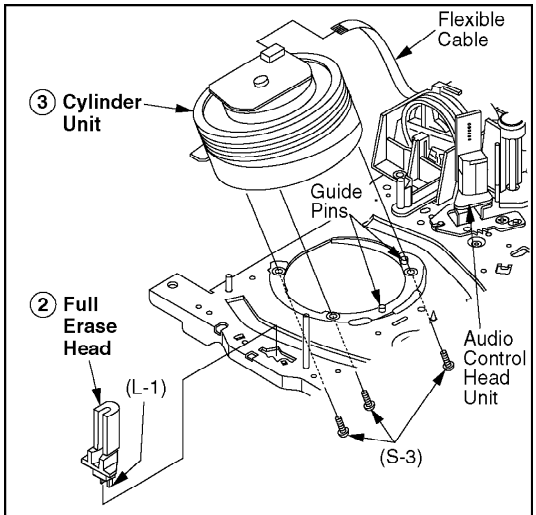
Fig. J1-2

Check the following alignment points to confirm that the Mechanism and Cassette Up Ass'y are in the **EJECT** Position from the top side.


S Loading Arm Unit
T Loading Arm Unit
Chassis hole
Slide
Through Holes
Loading Post Base-S Unit
Loading Post Base-T Unit
Note:
When sliding the Loading Post Base-T Unit as indicated by the arrow, holes on the S & T Loading Arm Unit are Through Holes with hole on chassis. (The hole on T Loading Arm Unit is aligned with the hole on S Loading Arm Unit.)
Through Hole
Main Rod
Line Up
Lift Gear
Intermediate Gear A
Through Hole
Drive Rack Arm
Mechanism and Cassette Up Ass'y
Top View
Drive Rack Unit
Line Up
Wiper Arm Unit

5.2.4. Full Erase Head and Cylinder Unit

Fig. J2


Flexible Cable
3 Cylinder Unit
Guide Pins
2 Full Erase Head
(L-1)
Audio Control Head Unit
(S-3)
Note:
Use extreme care when removing or replacing the Cylinder Unit. Do not touch the Video Heads during servicing.

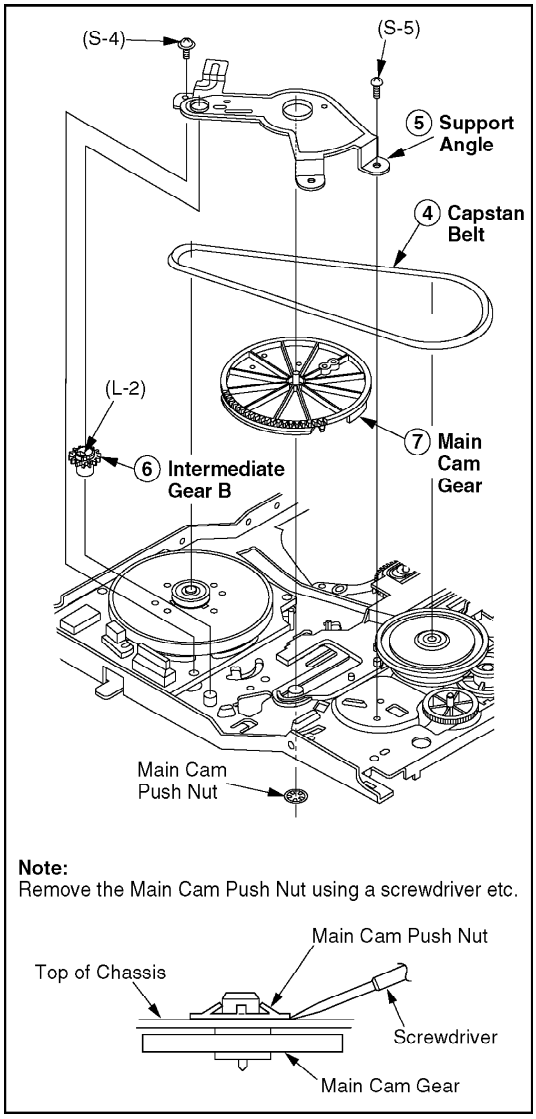
5.2.4.1. Reassembly Notes

1. After replacing the Cylinder Unit, clear the Total elapsed "Cylinder rotation" time (in hours) to 0. Refer to "USAGE SCREEN MODE" in

SERVICE NOTES.

5.2.5. Capstan Belt, Support Angle, Intermediate Gear B, and Main Cam Gear

Fig. J3-1



5.2.5.1. Reassembly Notes

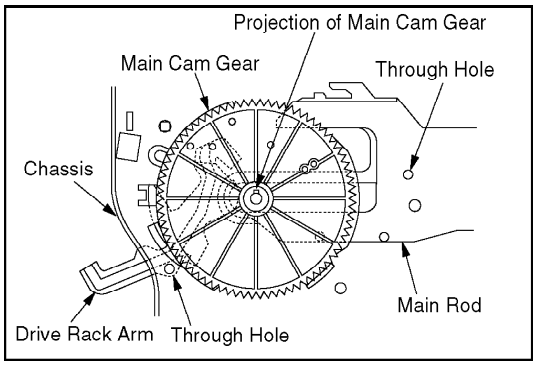
1. Alignment of Main Cam Gear, Drive Rack Arm, and Main Rod

A. Confirm that the hole on Main Rod is a Through Hole with a hole on chassis.

B. Confirm that the hole on Drive Rack Arm is a Through Hole with a hole on chassis.

C. Install the Main Cam Gear so that the projection of Main Cam Gear is in the upward position as shown.

Fig. J3-2

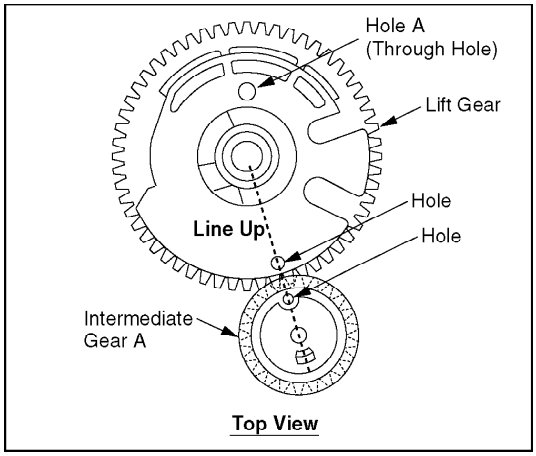


2. Confirmation/Alignment of Intermediate Gear B, Main Cam Gear, and Intermediate Gear A

A. Confirm that the Hole A on Lift Gear is a Through Hole with a hole on chassis.

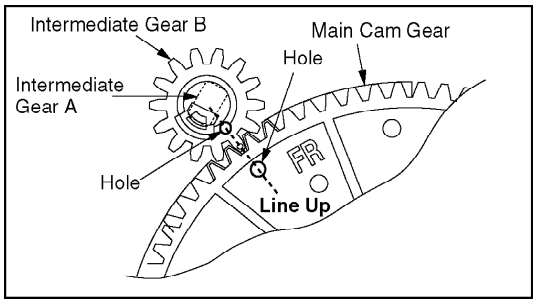
B. Confirm that the hole on Intermediate Gear A is aligned with the hole on Lift Gear.

Fig. J3-3



C. Install the Intermediate Gear B so that the hole on the Intermediate Gear B is aligned with the hole on the Main Cam Gear.

Fig. J3-4

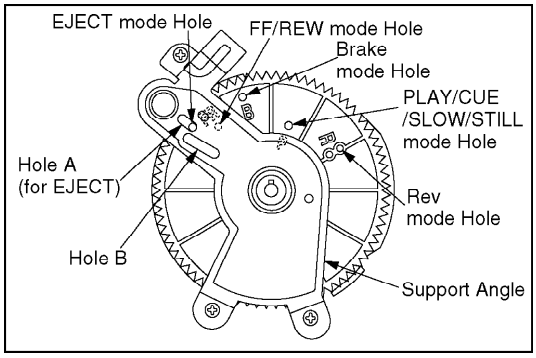


3. Holes on Main Cam Gear

A. The EJECT mode Hole on Main Cam Gear should be a Through

Hole with Hole A on Support Angle in EJECT mode. The each mode Hole on Main Cam Gear should be a Through Hole with Hole B on Support Angle in each mode.

Fig. J3-5



4. Main Cam Gear Kit

A. Main Cam Gear is supplied as a Main Cam Gear Kit only (Kit No. VVGS0009).

Main Cam Gear Kit consists of a Main Cam Gear and a Main Cam Push Nut.

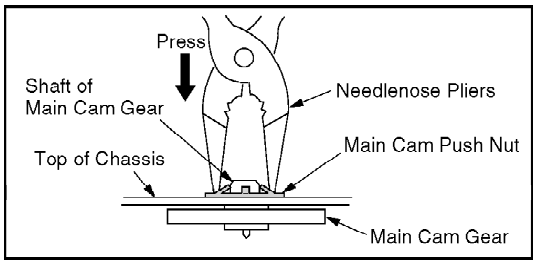
However, Main Cam Push Nut is available separately as a replacement part.

5. Installation of Main Cam Gear and Main Cam Push Nut

A. After installing the Support Angle, install the Main Cam Push Nut with Needlenose Pliers etc. so that it is flush with the chassis.

There may be some slight scratches on the Shaft of Main Cam Gear, when removing the Main Cam Gear. In case that the Main Cam Gear can be installed securely without tottering, it is fine to use the one. If any tottering, install all new parts.

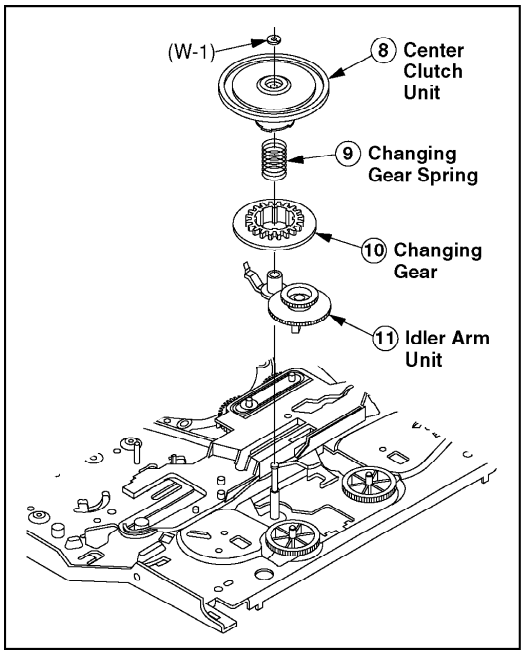
Fig. J3-6



6. The Main Cam Push Nut is not reusable. Install a new one.

5.2.6. Center Clutch Unit, Changing Gear Spring, Changing Gear, and Idler Arm Unit

Fig. J4-1

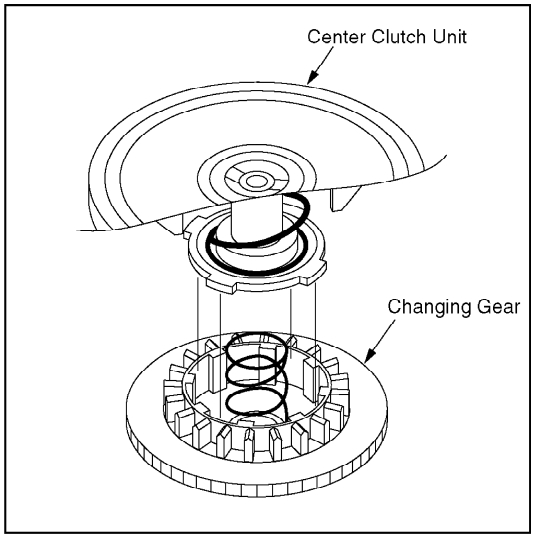


5.2.6.1. Reassembly Notes

1. Installation of Center Clutch Unit

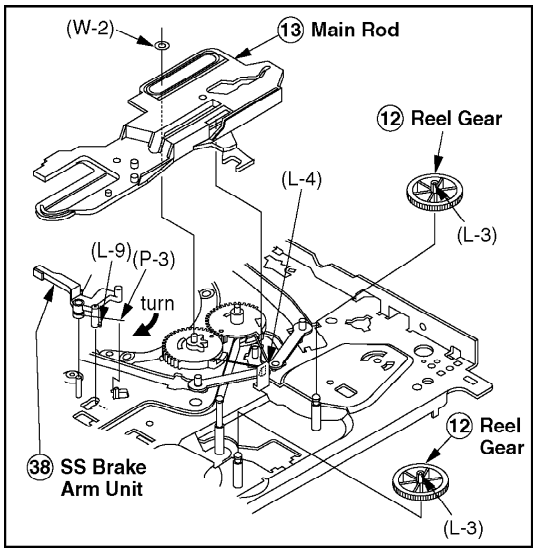
A. Fit the Center Clutch Unit into the Changing Gear.

Fig. J4-2



5.2.7. Reel Gear, Main Rod, and SS Brake Arm Unit

Fig. J5-1

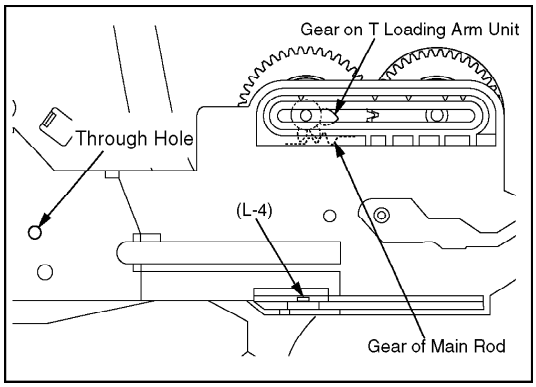


5.2.7.1. Reassembly Notes

1. Alignment of Main Rod and T Loading Arm Unit

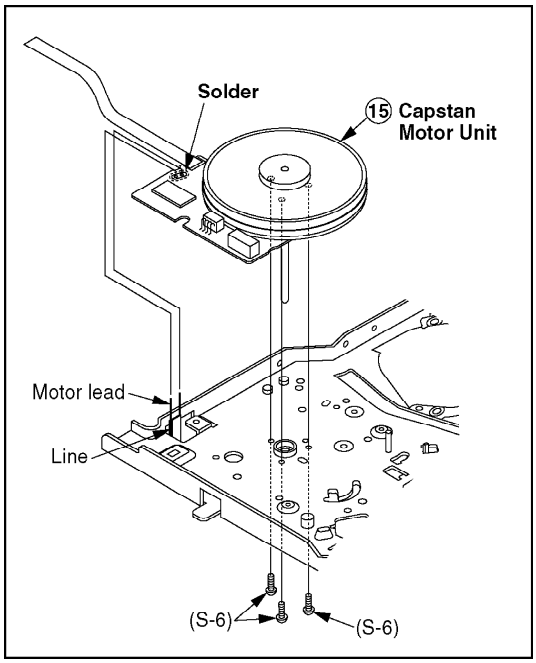
A. Align the Gear on T Loading Arm Unit with Gear of Main Rod. Confirm that the Hole on Main Rod is a Through Hole with a hole on chassis.

Fig. J5-2



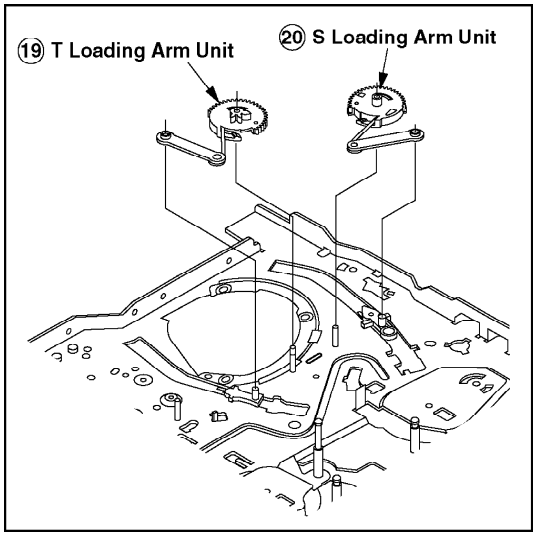
5.2.8. Capstan Motor Unit

Fig. J6



5.2.9. T Loading Arm Unit and S Loading Arm Unit

Fig. J7-1



5.2.9.1. Reassembly Notes

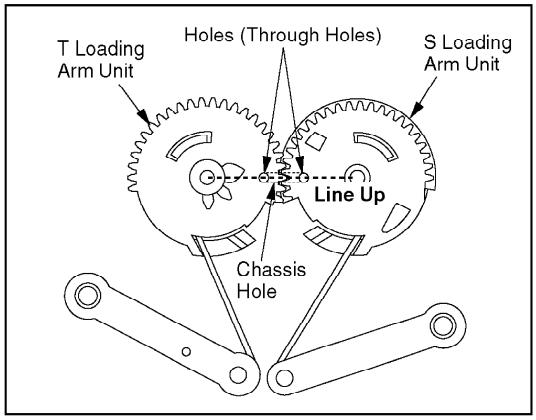
1. Alignment of T Loading Arm Unit and S Loading Arm Unit

A. Install the S Loading Arm Unit onto the chassis.

B. Install the T Loading Arm Unit so that the hole on T Loading Arm Unit is aligned with the hole on S Loading Arm Unit.

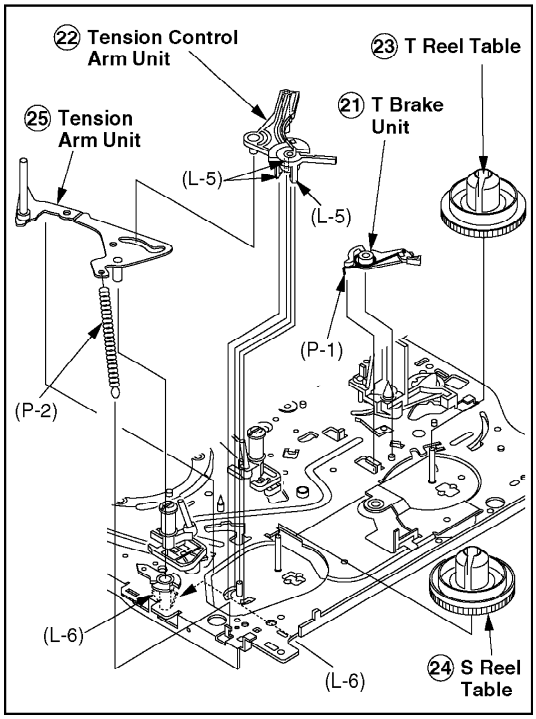
C. Confirm that the holes on the S & T Loading Arm Unit are Through Holes with hole on chassis.

Fig. J7-2



5.2.10. T Brake Unit, Tension Control Arm Unit, T Reel Table, S Reel Table, and Tension Arm Unit

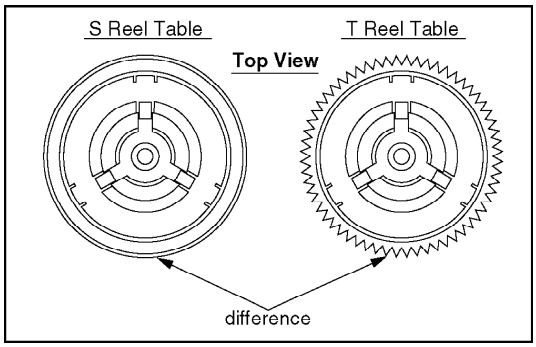
Fig. J8-1



5.2.10.1. Reassembly Notes

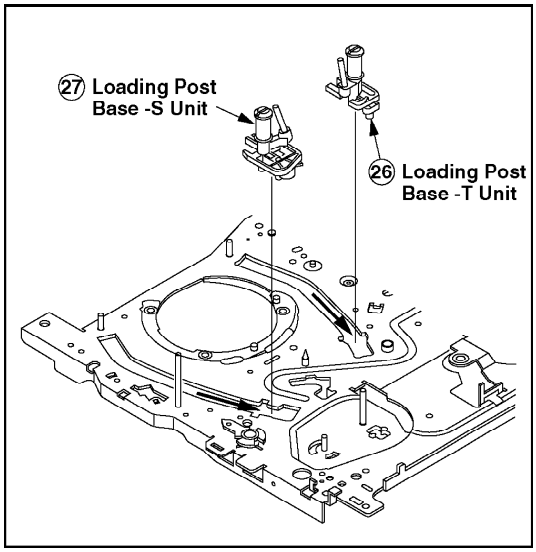
1. How to distinguish between S Reel Table and T Reel Table

Fig. J8-2



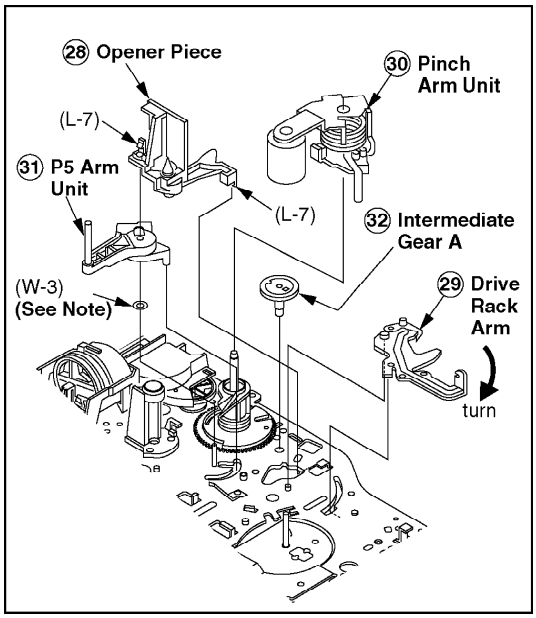
5.2.11. Loading Post Base -T Unit and Loading Post Base -S Unit

Fig. J9



5.2.12. Opener Piece, Drive Rack Arm, Pinch Arm Unit, P5 Arm Unit, and Intermediate Gear A

Fig. J10-1



Note:

In early units, a washer is used. When servicing the washer or the P5 Arm Unit, replace only the P5 Arm Unit with a new one, and remove the washer.

5.2.12.1. Reassembly Notes

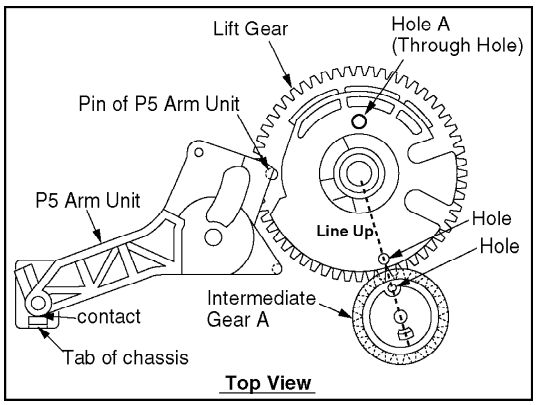
1. Installation/Alignment of Intermediate Gear A, Lift Gear and P5 Arm Unit

A. Rotate the Lift Gear so that Hole A on Lift Gear is a Through Hole with a hole on chassis.

B. Install the Intermediate Gear A so that the hole on Intermediate Gear A is aligned with the hole on Lift Gear.

C. Install the P5 Arm Unit so that it contacts with the tab of chassis.

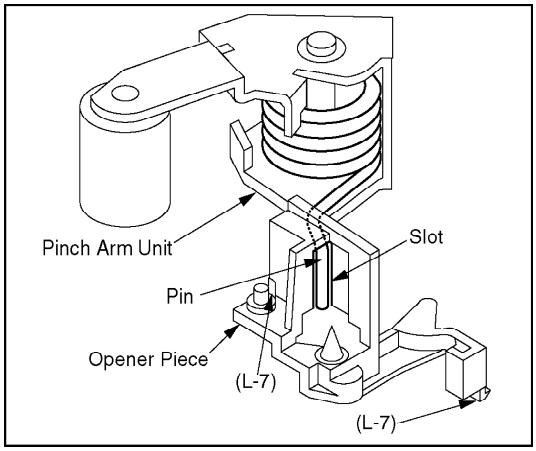
Fig. J10-2



2. Installation of Opener Piece

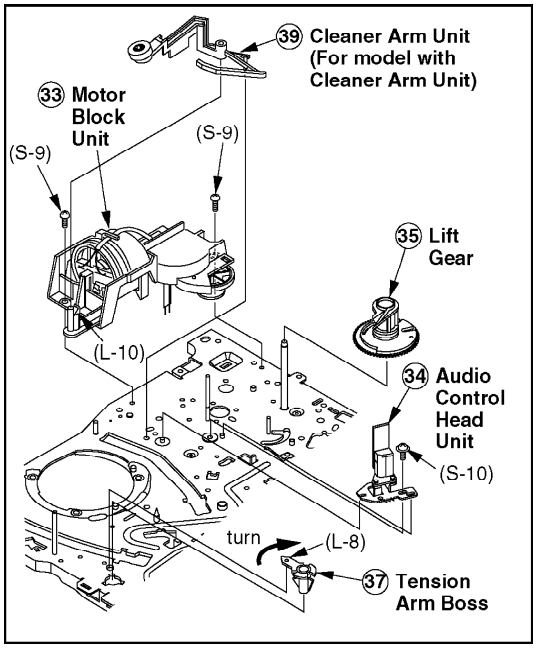
A. Install the Opener Piece so that the slot of the Opener Piece is inserted to the Pin of Pinch Arm Unit

Fig. J10-3



5.2.13. Motor Block Unit, Audio Control Head Unit, Lift Gear, Tension Arm Boss, and Cleaner Arm Unit

Fig. J11



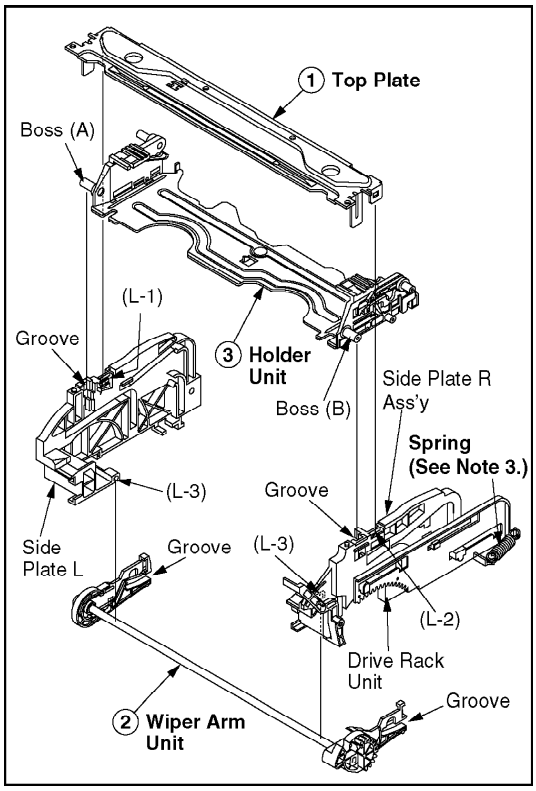
5.3. CASSETTE UP ASSEMBLY SECTION

This chart indicates Step/Location No. of Parts to be serviced and prior steps to gain access items to be serviced when disassembling. When reassembling, perform the step(s) in the reverse order.

Step/Loc. No.	Prior Step(s)	Part	Fig. No.	Remove	Alignment/Adjustment
①	----------	Top Plate	K1-1	(L-1), (L-2)	
②	1	Wiper Arm Unit	K1-1	2(L-3)	Gear Alignment
③	1,2	Holder Unit	K1-1	-	
④	----------	Opener Lever	K2	2(L-4)	
⑤	1,2,3,4	Drive Rack Unit	K2	-	

5.3.1. Top Plate, Wiper Arm Unit, and Holder Unit

Fig. K1-1



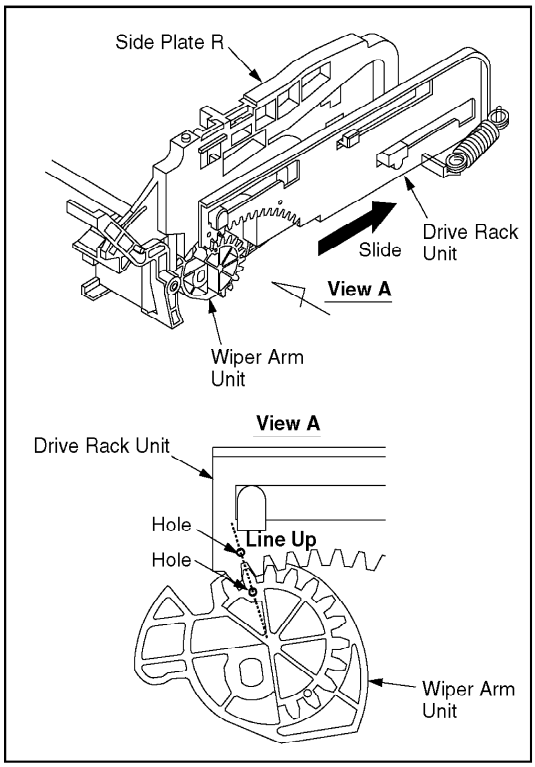
5.3.1.1. Reassembly Notes

1. Alignment of Wiper Arm Unit and Drive Rack Unit

A. Slide the Drive Rack Unit to the far right as indicated by the arrow.

B. Install the Wiper Arm Unit so that the hole on the Wiper Arm Unit is aligned with the hole on the Drive Rack Unit.

Fig. K1-2



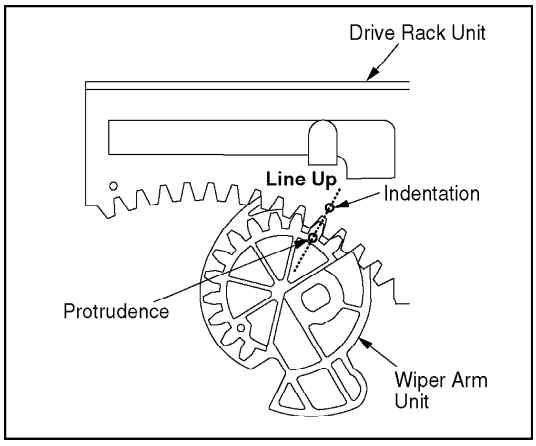
2. Installation of Holder Unit

A. Turn the Wiper Arm Unit so that the grooves on each end are aligned with the each groove on Side Plate L and R.

B. Insert Holder Unit boss (A) and (B) into the grooves as shown in Fig. K1-1.

C. Finally, in the EJECT Position, confirm that the protrudence on the Wiper Arm Unit is aligned with the indentation on the Drive Rack Unit.

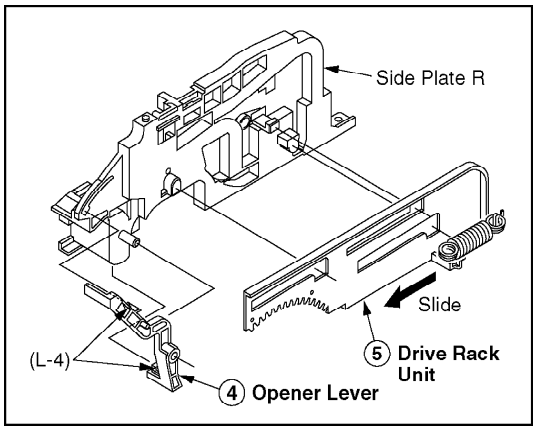
Fig. K1-3



3. Make sure to hook the spring to the Drive Rack Arm of Mechanism chassis.

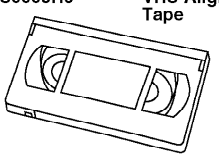
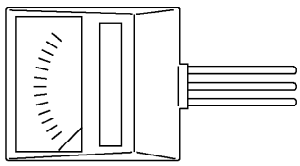
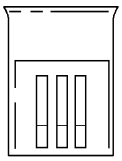
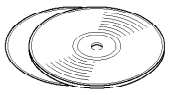
5.3.2. Opener Lever and Drive Rack Unit

Fig. K2



6. ADJUSTMENT PROCEDURES

6.1. SERVICE FIXTURES AND TOOLS

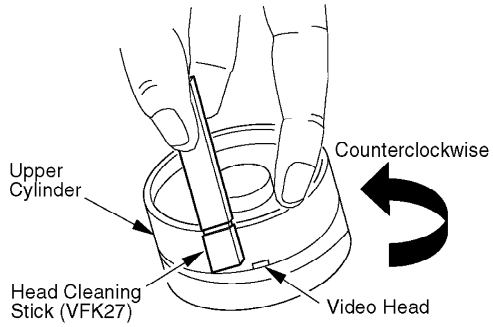
VFMS0003H6 VHS Alignment Tape  Video: Color Bar & Monoscope Audio: 6kHz(MONO)	Back Tension Meter (Made in USA., Purchase Locally) 	VFK27 Head Cleaning Stick 
VFK0330 H-Position Adjustment Driver 	VFKS0081 Grease 	VFK0329 Post Adjustment Driver
LSUA0034 Extension Cable (3pcs) 	DVDT-S01 DVD Test Disc 	Firmware Disc for DVD Drive Firmware Disc for DVD Decoder  Not supplied
Connector Cable (IDE Cable) Not supplied (Purchase locally)		

6.2. MECHANICAL ADJUSTMENT

6.2.1. CLEANING PROCEDURE FOR THE UPPER CYLINDER UNIT

1. **While slowly turning the Upper Cylinder Unit counterclockwise by hand, gently rub the Video Heads with a Head Cleaning Stick (VFK27) moistened with Ethanol.**
   When using a Cleaning Cassette, make sure to use "DRY" type only and be aware that excessive use can shorten head life.

Fig. M1



Note:

1. **Do not rub vertically or apply excess pressure to the Video Heads. Do not turn the Upper Cylinder Unit clockwise while cleaning.**
2. **After cleaning, use a Dry Head Cleaning Stick (VFK27) to remove any Ethanol remaining on the cylinder tape path. Otherwise, tape damage will occur.**

6.2.2. ADJUSTMENT PROCEDURES

6.2.2.1. BACK TENSION CONFIRMATION

Purpose:

To fine adjust the Back Tension so that the tape runs smoothly with a constant tension.

Symptom of Misadjustment:

1) If the tape tension is less than the specified value, the tape cannot come into proper contact with the Video Heads, resulting in poor picture playback.
2) If the tape tension is too high, the tape will soon be damaged.

Equipment Required:

Back Tension Meter (Made in U.S.A., Purchase Locally)
VHS Cassette Tape (120-Minute Tape)

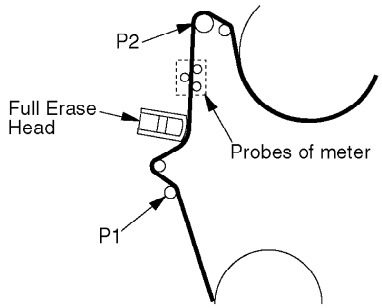
Specification:

22.4 gf±2.5 gf

(0.220 N±0.025 N)

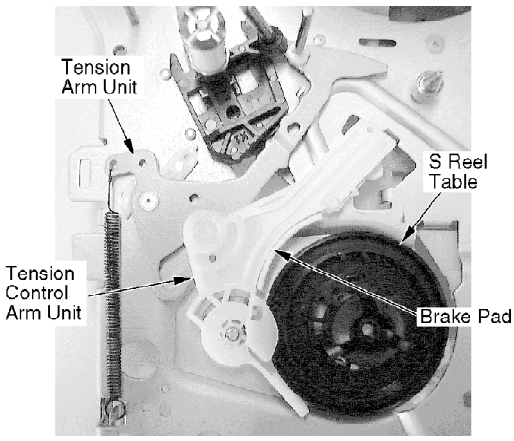
1. **Play back a T120 cassette tape from the beginning for approx. 10 to 20 seconds to stabilize tape movement.**
2. **Insert a Tension Meter into tape path and measure the back tension.**

Fig. M2-1



3. **If the reading is out of specification, make sure that there is no dust or foreign material between the Brake Pad of Tension Control Arm Unit and the S Reel Table.**
   After cleaning, the reading of tension measurement is still out of specification, replace the Tension Arm Unit and the Tension Control Arm Unit.

Fig. M2-2



Note:

1. **Be sure that the three probes of the meter are all in solid contact with the tape, but not touching any other parts of the mechanism.**
2. **It is recommended that measurements should be repeated at least three (3) times because the tension meter is very sensitive to external vibrations.**

6.2.2.2. TAPE INTERCHANGEABILITY ADJUSTMENT

Note:

To perform these adjustment/confirmation procedures, enter the Tracking center mode.

Equipment Required:

Dual Trace Oscilloscope
VHS Alignment Tape (VFMS0003H6)
Post Adjustment Driver (VFK0329)
H-Position Adjustment Driver (VFK0330)

6.2.2.2.1. ENVELOPE OUTPUT ADJUSTMENT

The height of the P2 and P3 Posts replacement part is preadjust at the factory.

Purpose:

To achieve a satisfactory picture and secure precise tracking.

Symptom of Misadjustment:

If the envelope is output poorly, much noise will appear in the picture. Then the tracking will lose precision and the playback picture will be distorted by any slight variation of the tracking control circuit.

Equipment Required:

Post Adjustment Driver (VFK0329)

1. **Insert the alignment tape.**
2. **Press and hold FF button and CH DOWN buttons on VCR together over 5 seconds in power off condition.**
   The power comes on and the unit goes into service mode.
3. **Play back the alignment tape.**
4. **To enter Tracking center mode, press PLAY button in Play back mode. "TRACKING CENTER" will be displayed on the TV monitor.**
5. **Connect the oscilloscope to TP3002 on the Video Signal Process Section of the Main C.B.A. Use TP6205 as a trigger.**
6. **Confirm that the RF envelope is flat enough (V1/V-max. is 0.7 or more). If not, with Post Adjustment Driver, adjust P2 and P3 post height so that the envelope waveform becomes as flat (V1/V-max. is 0.7 or more) as possible (No envelope drop). If the envelope drop appears on the left-half of the waveform, adjust P2 post**

height. If the envelope drop appears on the right-half of the waveform, adjust P3 post height.

CAUTION:

Overtightening P2 and P3 posts may cause the threads to strip.

Note:

It will be possible to confirm Step 6 according to following steps.

1. **Release the Tracking center mode.**
2. **Press the Tracking Control Up or Down button on remote control. Make sure that the envelope waveform remains flat. If not, readjust P2 and/or P3 post heights.**

Fig. M3-1

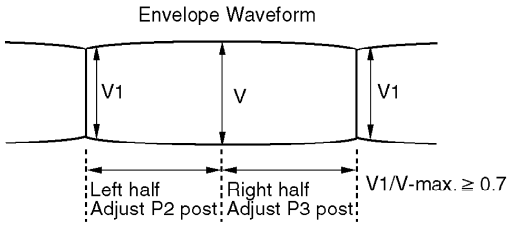
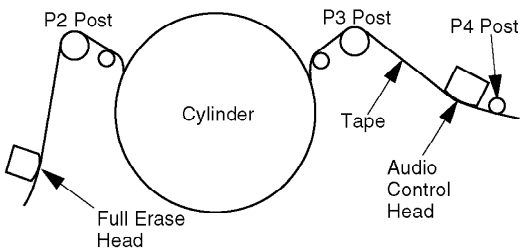
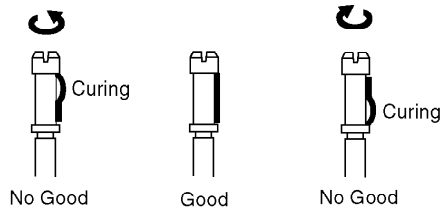


Fig. M3-2



7. **After adjustment, confirm that the tape travels without curling at P2 and P3 posts.**

Fig. M3-3



8. **To release from Tracking center mode, press PLAY or STOP button.**

6.2.2.2.2. AUDIO CONTROL HEAD TILT ADJUSTMENT

Purpose:

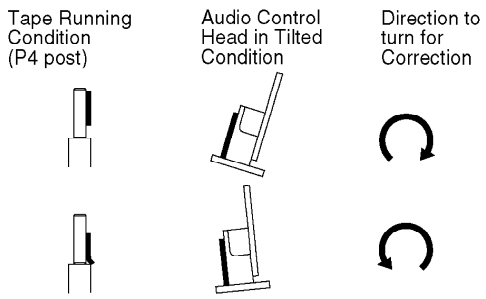
To confirm that the tape runs smoothly. In particular, confirm that the tape properly picks up the Audio Signal at the upper part of the head and the Control Signal at the lower part of the head.

Symptom of Misadjustment:

If the tilt of the Audio Control Head is poorly adjusted, the tape will eventually be damaged. An intermittent Blue screen may be seen in Playback.

1. **Play back a T120 cassette tape and check that the tape travels smoothly between the upper and lower guides of the P4 post.**
2. **If necessary, adjust Black Screw (B) clockwise until the tape begins to curl at the lower edge of the P4 post. Then adjust the screw counterclockwise until the curling is eliminated.**

Fig. M4



6.2.2.2.3. AUDIO CONTROL HEAD HEIGHT ADJUSTMENT

The height of the Audio Control Head replacement part is preset at the factory.

Purpose:

To be sure the tape runs properly along the Control Head.

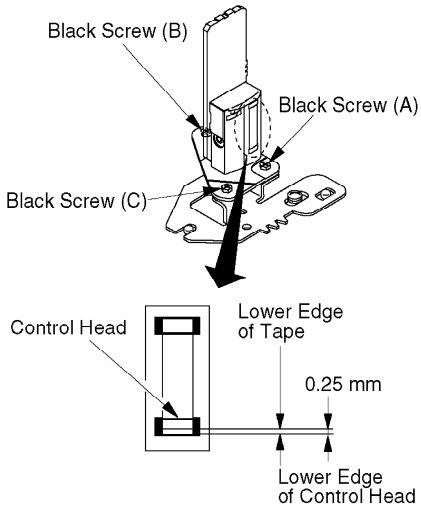
Symptom of Misadjustment:

If the control signal is not properly picked up, Servo Operation cannot be achieved. A Blue screen will be seen in Playback.

This confirmation is required when the Audio Control Head is replaced.

1. **Play back a T120 cassette tape and check that the lower edge of the tape runs approximately 0.25 mm above the lower edge of the Audio Control Head.**
2. **If necessary, adjust Black Screws (A) and (B) clockwise to lower the tape or counterclockwise to raise.**

Fig. M5



6.2.2.2.4. AUDIO CONTROL HEAD AZIMUTH ADJUSTMENT

Purpose:

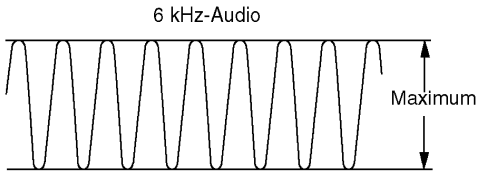
To adjust the position and height of the Audio Control Head so that it meets the tape tracks properly.

Symptom of Misadjustment:

If the position of the Audio Control Head is not properly adjusted, the Audio S/N Ratio is poor.

1. **Connect the oscilloscope to the audio output jack on the rear side of the deck.**
2. **Play back the 6 kHz Monaural Audio portion of the alignment tape.**
3. **Adjust Black Screw (C) on the Audio Control Head base so that the output level is at maximum.**

Fig. M6



4. **Confirm the height of the Audio Control Head is proper. If not, readjust Black Screws (A) and (B).**

6.2.2.2.5. AUDIO CONTROL HEAD HORIZONTAL POSITION ADJUSTMENT

Purpose:

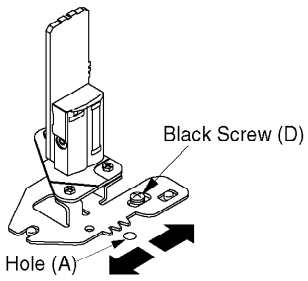
To adjust the Horizontal Position of the Audio Control Head.

Symptom of Misadjustment:

If the Horizontal Position of the Audio Control Head is not properly adjusted, a maximum envelope cannot be obtained at the Neutral Position of the Tracking Control Circuit.

1. **Insert the alignment tape.**
2. **Press and hold FF button and CH DOWN buttons on VCR together over 5 seconds in power off condition.**
   The power comes on and the unit goes into service mode.
3. **Play back the alignment tape.**
4. **To enter Tracking center mode, press PLAY button in Play back mode. "TRACKING CENTER" will be displayed on the TV monitor.**
5. **Connect the oscilloscope to TP3002 on the Video Signal Process Section of the Main C.B.A. Use TP6205 as a trigger.**
6. **Loosen the Black Screw (D) and tighten it slightly. Set the H-Position Adjustment Driver into the Hole (A). Then slowly turn the fixture either clockwise or counterclockwise so that the envelope is at maximum.**

Fig. M7



7. **Tighten Black Screw (D).**
8. **To release from Tracking center mode, press PLAY or STOP button.**

Note:

Old type of H-Position Adjustment Driver (VFK0136) can be used for this adjustment.

6.3. ELECTRICAL ADJUSTMENT

6.3.1. TEST EQUIPMENT

To do all of these electrical adjustments, the following equipment is required.

1. **Dual-Trace Oscilloscope**

Voltage Range: 0.001 V to 50 V/Div.
Frequency Range: DC to 50 MHz
Probes: 10:1, 1:1

2. Isolation Transformer (Variable)

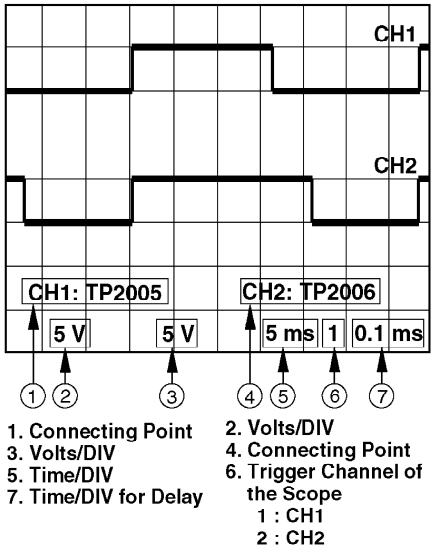
3. VHS Alignment Tape (VFMS0003H6)

4. DVD Test Disc (DVDT-S01)

5. TV monitor

6.3.2. HOW TO READ THE ADJUSTMENT PROCEDURES

Fig. E1



6.3.3. DVD LUMINANCE LEVEL ADJUSTMENT

Purpose:

To set the optimum luminance level for DVD.

Symptom of Misadjustment:

The picture is too bright or too dark.

Test Point :

TP8201 (DVD DECODER C.B.A.)
TP8537 (DVD DECODER C.B.A.)

Adjustment:

R8299 (DVD DECODER C.B.A.)
R8523 (DVD DECODER C.B.A.)

Specification:

1.0 V[P-P]±50 mV[P-P]

Input :

Mode :

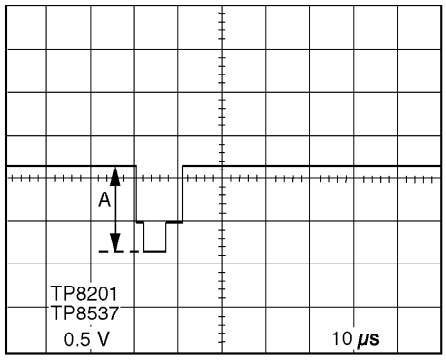
DVD PLAY

Equipment :

Oscilloscope, DVD Test Disc

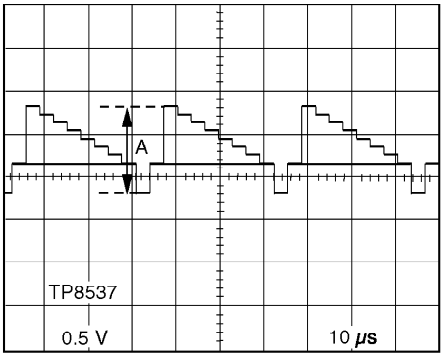
1. **Playback 100% Flat Field on the DVD Test Disc in DVD PLAY Mode.**
2. **Connect the Oscilloscope to TP8201 (For model without PROGRESSIVE OUT), TP8537 (For model with PROGRESSIVE OUT) on the DVD DECODER C.B.A. and GND (TP8203 on the DVD DECODER C.B.A.).**
3. **Adjust R8299 on the DVD DECODER C.B.A. so that the level A becomes 1.0 V[P-P]±50 mV[P-P].**

Fig. E2-1



4. **(For model with PROGRESSIVE OUT)**
   Playback 100% Full Color Bar on the DVD Test Disc in DVD PLAY Mode.
5. **Press PROGRESSIVE OUT button on the unit.**
6. **Connect the Oscilloscope to TP8537 on the DVD DECODER C.B.A. and GND (TP8203 on the DVD DECODER C.B.A.).**
7. **Adjust R8523 on the DVD DECODER C.B.A. so that the level A becomes 1.0 V[P-P]±50 mV[P-P].**

Fig. E2-2



6.3.4. EVR (Electronic Variable Resister) ADJUSTMENT WITH THE REMOTE CONTROL

This unit has electronic technology using I2C Bus concept.The PG SHIFTER ADJUSTMENT is adjusted by using " On Screen Display " and the remote control instead of adjusting mechanical controls (VR).

6.3.5. PG SHIFTER ADJUSTMENT

Purpose:

Determine the Video Head Switching Point during Playback.

Symptom of Misadjustment:

May cause Head Switching Noise and/or Vertical Jitter.

Test Point :

TP3001 (Main C.B.A.),
TP6205 (Main C.B.A.)

Specification:

T = 6 H±0.5 H (0.38 ms±0.03 ms)

Mode :

SP Playback

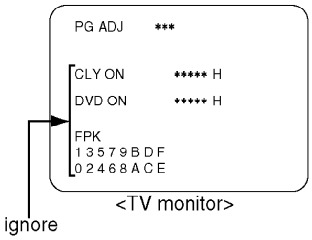
Equipment :

Oscilloscope,
VHS Alignment Tape (VFMS0003H6),
TV monitor

1. **Insert the VHS Alignment Tape. Then, turn off the power. Enter service mode by pressing and holding FF and CH DOWN buttons on VCR together for more than 5 seconds in power off condition. The power comes on.**
2. **Play back SP mode. Then press 100 button on the remote to enter EVR PG SHIFTER ADJUSTMENT Mode. PG ADJUSTMENT screen**

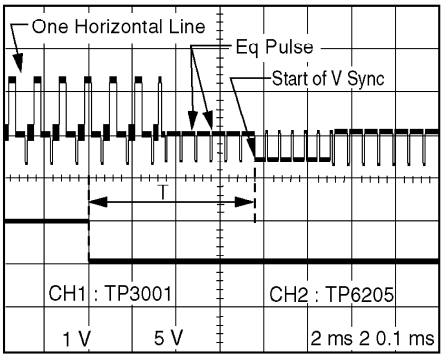
will appear on the TV monitor.

Fig. E3-1



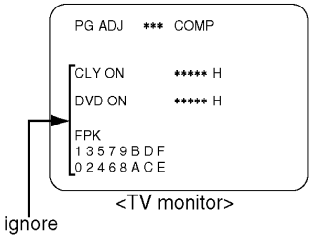
3. Connect the channel-1 scope probe to TP3001 and the channel-2 scope probe to TP6205. Used TP6205 as a trigger.
4. Adjust value so that the trailing edge of the head switching pulse is placed 6 H±0.5 H (0.38 ms±0.03 ms) before the start of the vertical sync pulse by pressing CH UP and CH DOWN buttons on the remote control.

Fig. E3-2



5. After adjustment is completed, press REC button on the remote control. Then " COMP " will appear on the TV monitor and adjusted value will be written to Memory IC (IC6005).

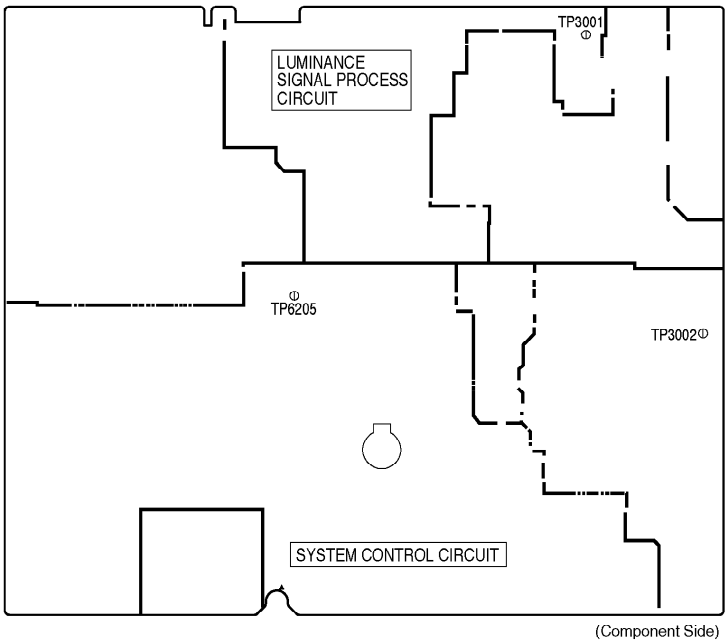
Fig. E3-3



6. Press STOP button on the remote control to release from EVR PG SHIFTER ADJUSTMENT MODE.

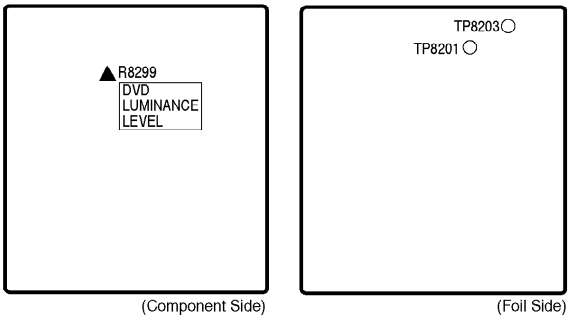
6.4. TEST POINTS AND CONTROL LOCATION

Main C.B.A.



(Component Side)

DVD Decoder C.B.A.



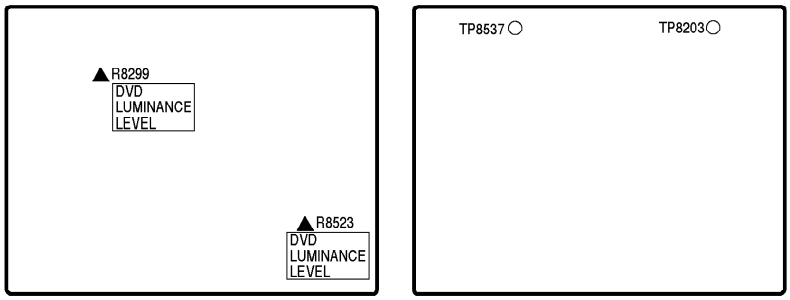
(Component Side) (Foil Side)

FUNCTION OF IMPORTANT TEST POINTS	
TP3001	Video Signal to Jack
TP3002	REC/PB Video envelope signal
TP6205	Head SW.

Test Point Information

① Test Point with a jumper wire across a hole in the P.C.B.
○ Test Point with no Test Pin.

DVD Decoder C.B.A. (For model with PROGRESSIVE OUT)



(Component Side) (Foil Side)

7. SCHEMATIC DIAGRAMS

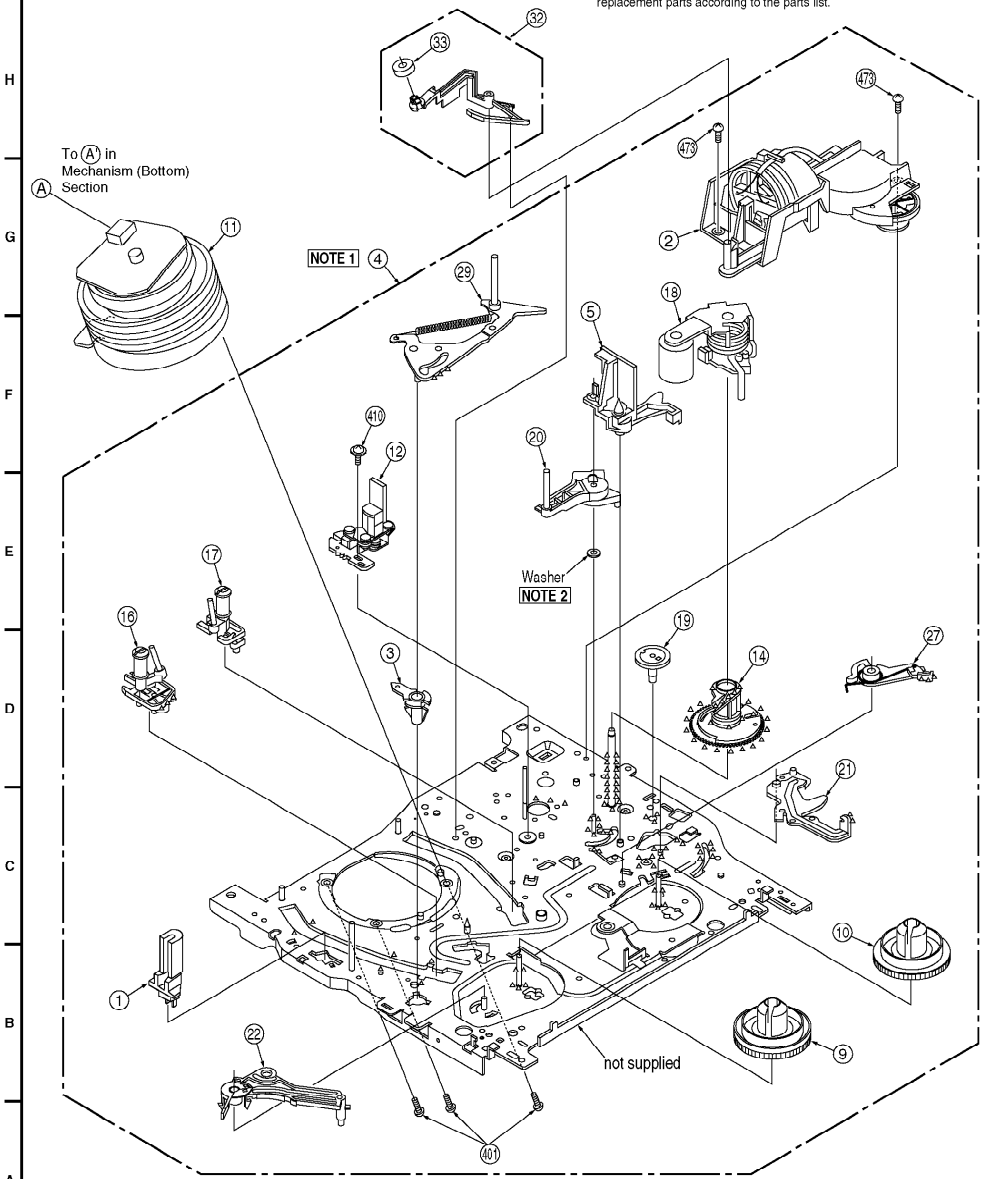
7.1. SCHEMATIC DIAGRAM & CIRCUIT BOARD LAYOUT NOTES
7.2. MAIN SCHEMATIC DIAGRAMS
7.3. OPERATION SCHEMATIC DIAGRAM
7.4. DVD DECODER SCHEMATIC DIAGRAMS
7.5. INTERCONNECTION SCHEMATIC DIAGRAM
7.6. VOLTAGE CHART
8. CIRCUIT BOARD LAYOUT
8.1. MAIN C.B.A.
8.2. OPERATION C.B.A.
8.3. DVD DECODER C.B.A.
9. BLOCK DIAGRAMS
10. EXPLODED VIEWS
10.1. MECHANISM (TOP) SECTION

❶ MECHANISM (TOP) SECTION

LUBRICATION POINTS
When the marked parts are replaced, apply the recommended lubricants or adhesive for better maintenance of the unit.

Mark	Kind of Lubricant	Availability	Part Number
△△△	Grease	Available from Factory	VFKS0081

Note: Parts with no Ref. No. in "EXPLODED VIEWS" are not supplied. And some Ref. No. will be skipped. Be sure to make your orders of replacement parts according to the parts list.



NOTE 1: The Mechanical Chassis Sub Ass'y (Ref. No. 4) consists of all the mechanical parts except the Cylinder Unit (Ref. No. 11) and the Cassette Up Ass'y (Ref. No. 61). After replacing the Mechanical Chassis Sub Ass'y, be sure to perform "TAPE INTERCHANGEABILITY ADJUSTMENT" in MECHANICAL ADJUSTMENT procedures.

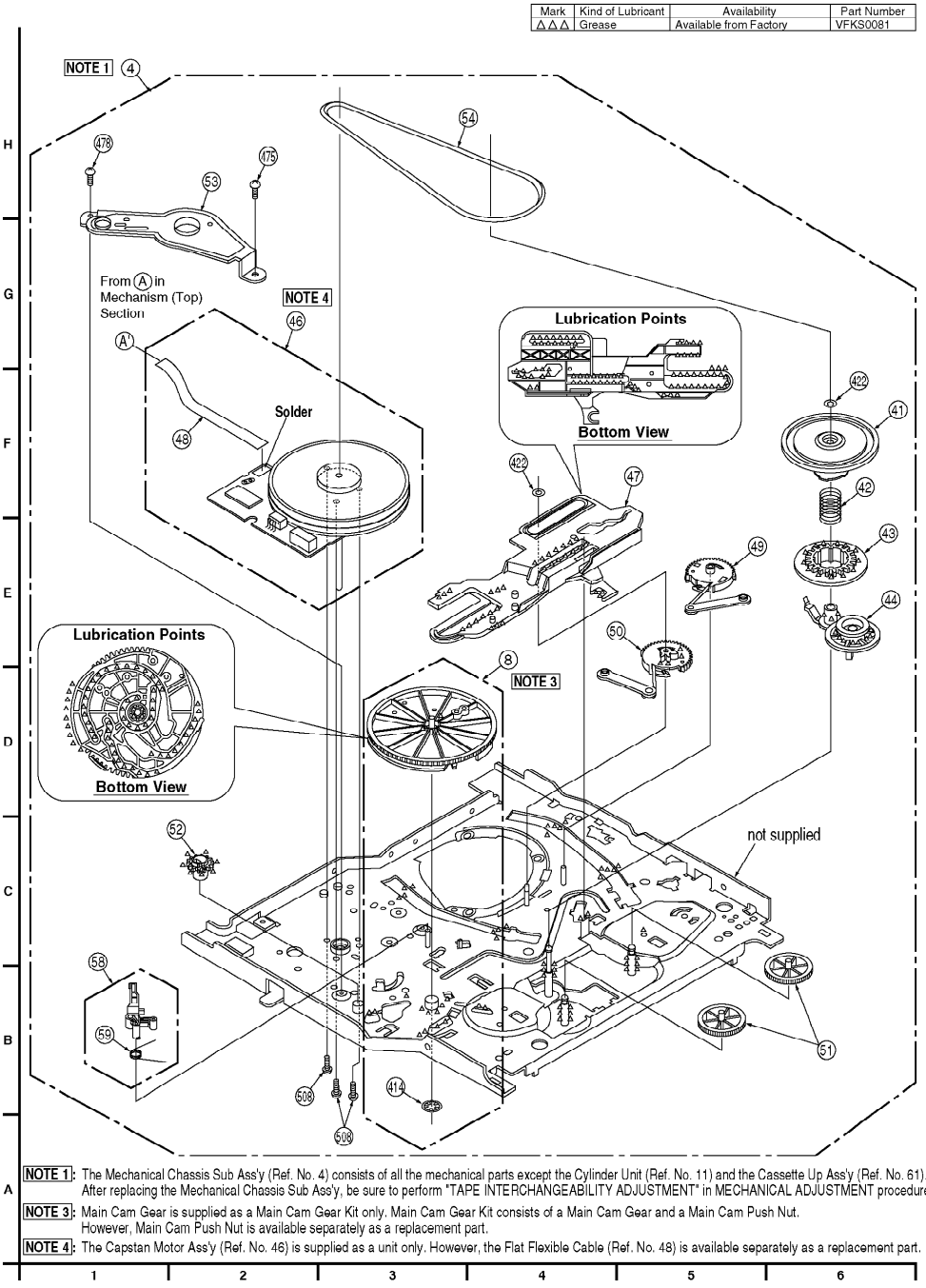
NOTE 2: In early units, a washer is used. When servicing the washer or the P5 Arm Unit, replace only the P5 Arm Unit with a new one, and remove the washer.

10.2. MECHANISM (BOTTOM) SECTION

❷ MECHANISM (BOTTOM) SECTION

LUBRICATION POINTS
When the marked parts are replaced, apply the recommended lubricants or adhesive for better maintenance of the unit.

Mark	Kind of Lubricant	Availability	Part Number
△△△	Grease	Available from Factory	VFKS0081



NOTE 1: The Mechanical Chassis Sub Ass'y (Ref. No. 4) consists of all the mechanical parts except the Cylinder Unit (Ref. No. 11) and the Cassette Up Ass'y (Ref. No. 61). After replacing the Mechanical Chassis Sub Ass'y, be sure to perform "TAPE INTERCHANGEABILITY ADJUSTMENT" in MECHANICAL ADJUSTMENT procedures.

NOTE 3: Main Cam Gear is supplied as a Main Cam Gear Kit only. Main Cam Gear Kit consists of a Main Cam Gear and a Main Cam Push Nut. However, Main Cam Push Nut is available separately as a replacement part.

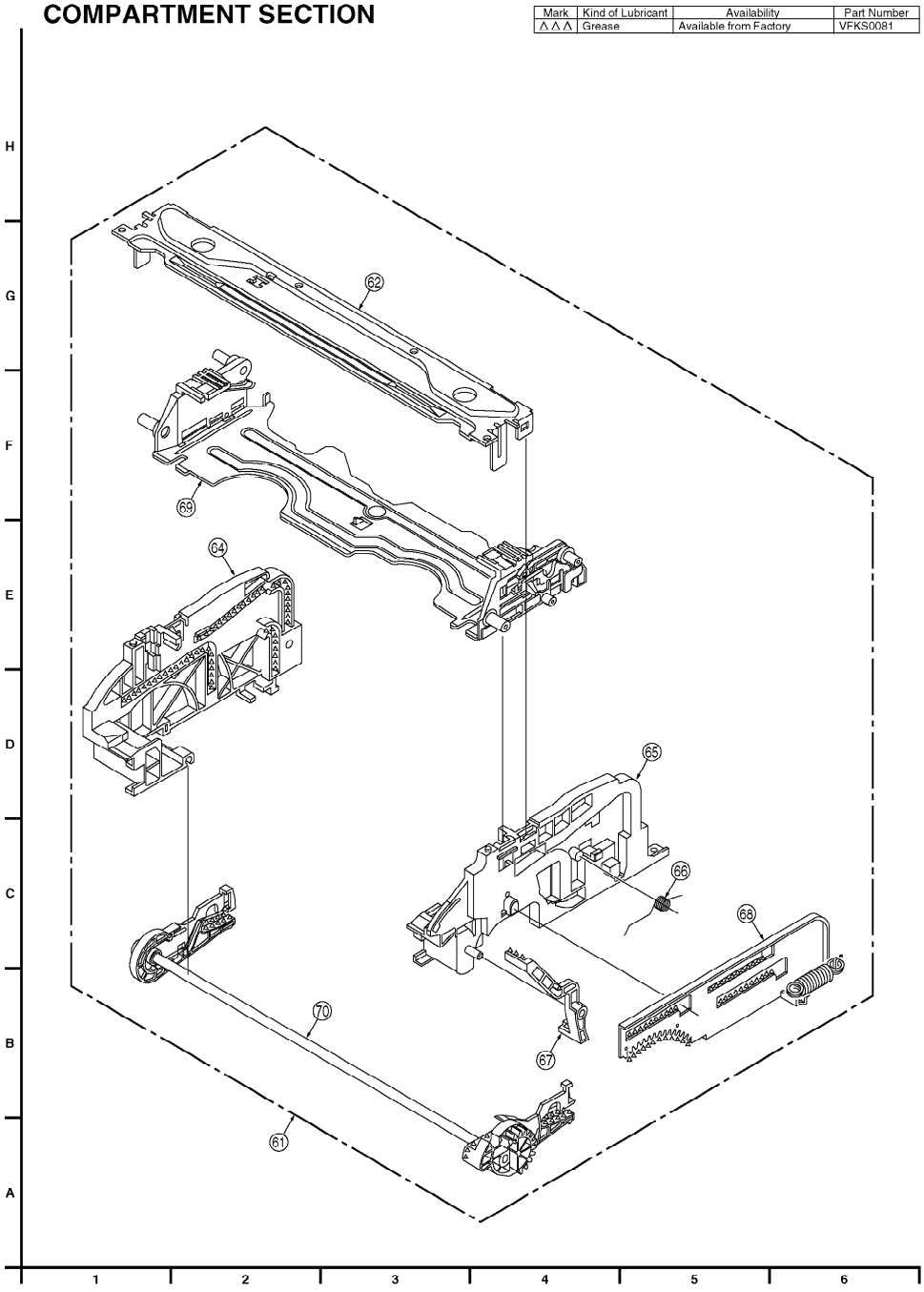
NOTE 4: The Capstan Motor Ass'y (Ref. No. 46) is supplied as a unit only. However, the Flat Flexible Cable (Ref. No. 48) is available separately as a replacement part.

10.3. CASSETTE UP COMPARTMENT SECTION

❸ CASSETTE UP COMPARTMENT SECTION

LUBRICATION POINTS
When the marked parts are replaced, apply the recommended lubricants or adhesive for better maintenance of the unit.

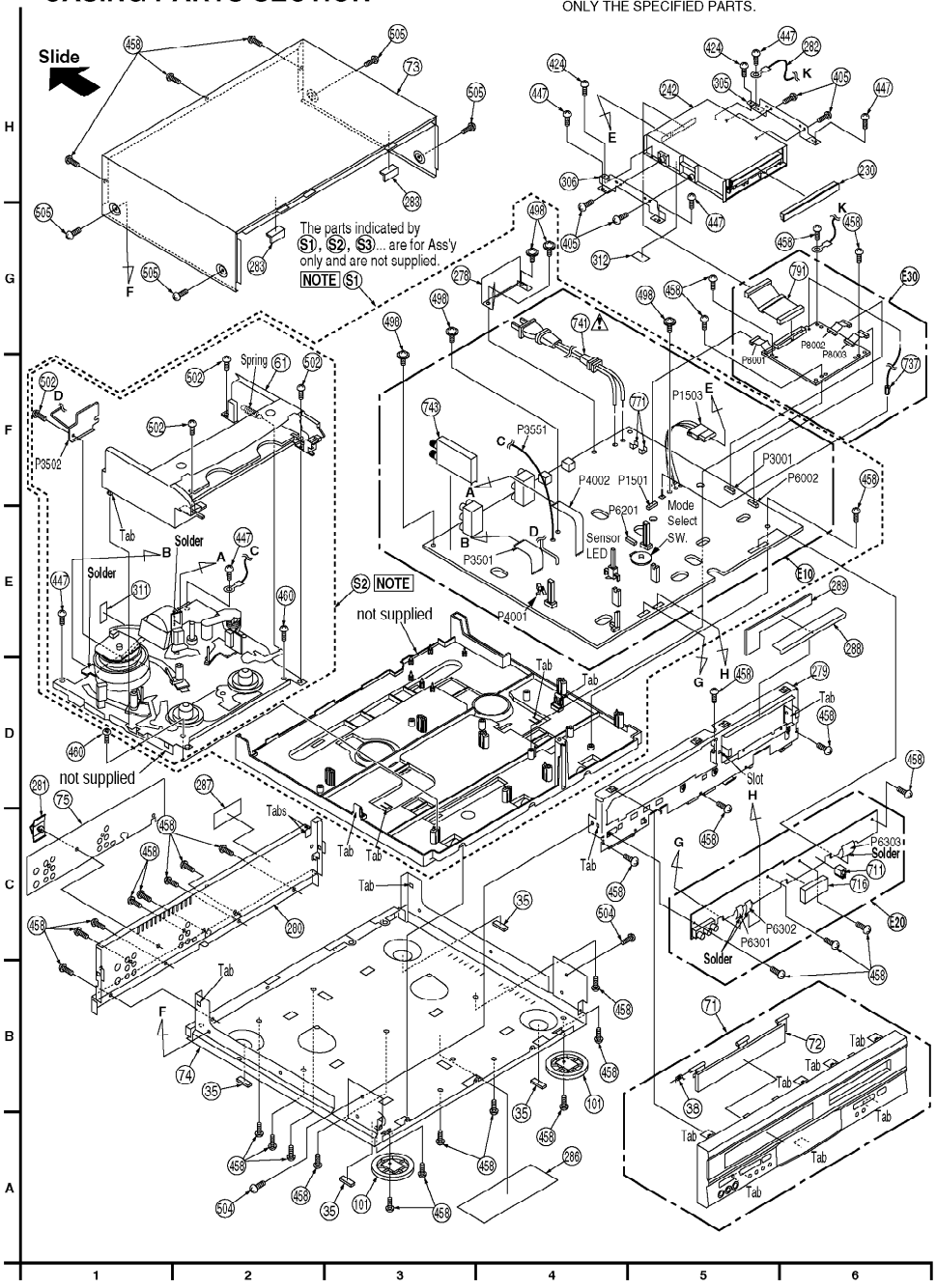
Mark	Kind of Lubricant	Availability	Part Number
△△△	Grease	Available from Factory	VFKS0081



10.4. CHASSIS FRAME AND CASING PARTS SECTION

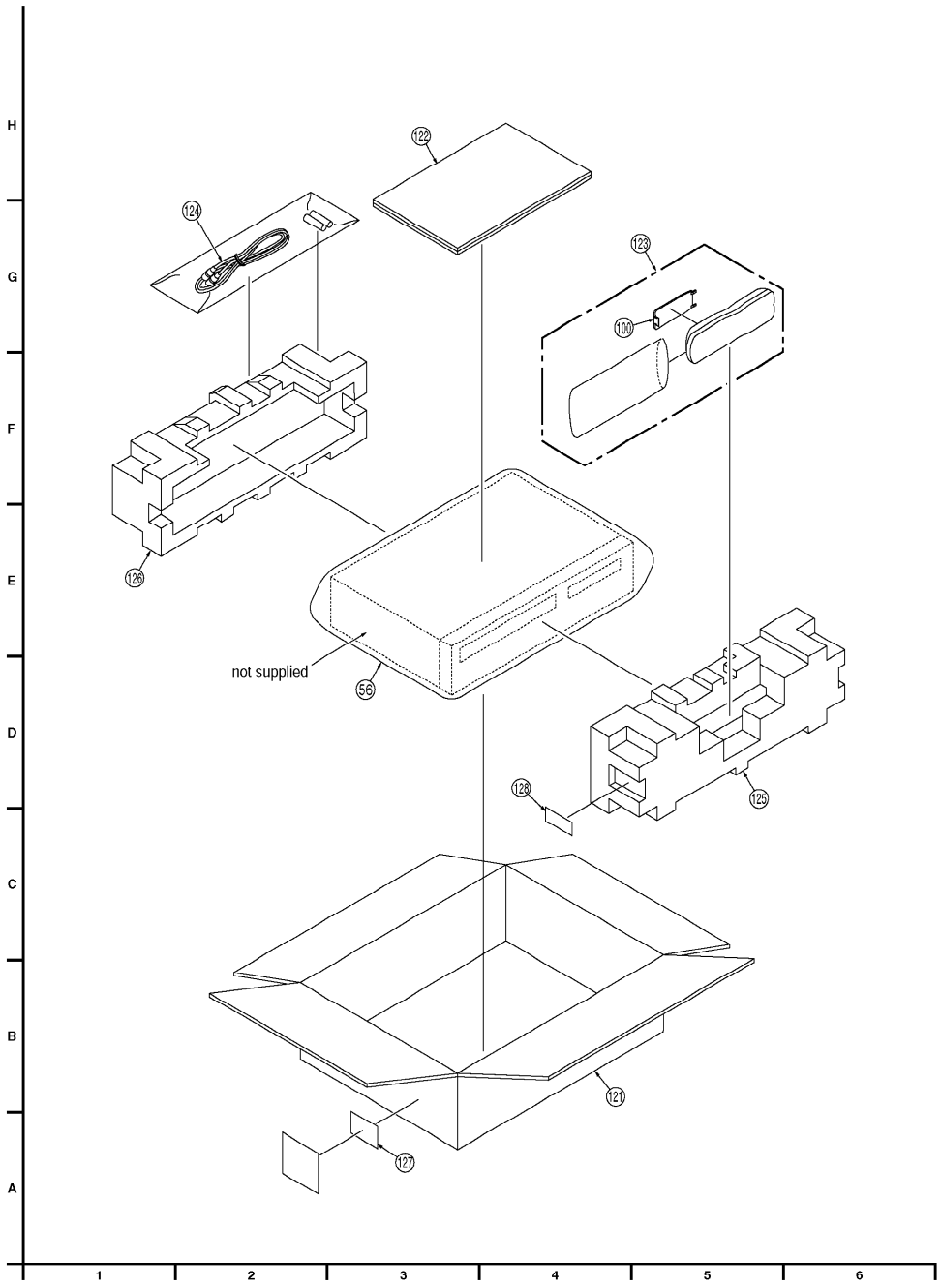
❹ CHASSIS FRAME AND CASING PARTS SECTION

IMPORTANT SAFETY NOTICE
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.



10.5. PACKING PARTS AND ACCESSORIES SECTION

❺ PACKING PARTS AND ACCESSORIES SECTION



11. REPLACEMENT PARTS LISTS

BEFORE REPLACING PARTS, READ THE FOLLOWING:

11.1. REPLACEMENT NOTES

11.1.1. General Notes

1. Use only original replacement parts:

To maintain original function and reliability of repaired units, use

only original replacement parts which are listed with their part numbers in the parts list.

2. **IMPORTANT SAFETY NOTICE**
   Components identified by the sign ⚠ have special characteristics important for safety. When replacing any of these components, use only the specified parts.
3. **SPECIAL NOTE**
   All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" section of this service manual.
4. **Parts with no Ref. No. in "EXPLODED VIEWS" are not supplied. And some Ref. No. will be skipped. Be sure to make your orders of replacement parts according to the parts list.**
5. **Parts different in shape or size may be used. However, only interchangeable parts will be supplied as service replacement parts.**
6. **Parts with mark "AVC" in the Remarks column are supplied from AVC. Others are supplied from MKI.**
7. **Item numbers with capital letter E (Example: E10, E20,...) in the Ref. No. column are shown in the exploded views.**
8. **Parts whose Ref. Nos. are the same are interchangeable as replacement parts. Any of these parts may be ordered and used as a replacement part.**

11.1.2. Mechanical Replacement Notes

1. **Section No. of parts shown in Exploded Views are indicated in the Remarks column.**
2. **The Mechanical Chassis Sub Ass'y (Ref. No. 4) consists of all the mechanical parts except the Cylinder Unit (Ref. No. 11) and the Cassette Up Ass'y (Ref. No. 61).**
   After replacing the Mechanical Chassis Sub Ass'y, be sure to perform "TAPE INTERCHANGEABILITY ADJUSTMENT" in MECHANICAL ADJUSTMENT procedures.

3. In early units, a washer is used.
   When servicing the washer or the P5 Arm Unit, replace only the P5 Arm Unit with a new one, and remove the washer.
4. Main Cam Gear is supplied as a Main Cam Gear Kit (Ref. No. 8) only. Main Cam Gear Kit consists of a Main Cam Gear and a Main Cam Push Nut. However, Main Cam Push Nut is available separately as a replacement part.
5. The Capstan Motor Ass'y (Ref. No. 46) is supplied as a unit only. However, the Flat Flexible Cable (Ref. No. 48) is available separately as a replacement part.
6. The Infrared Remote Control Unit (Ref. No. 123) replacement part is available as a complete assembly unit only. Do not try to disassemble the Infrared Remote Control Unit. However, the battery cover is available separately as a replacement part.
7. Main Cam Push Nut (Ref. No. 414) is not reusable.
   If removed, install a new one.

11.1.3. Electrical Replacement Notes

1. Unless otherwise specified;
   All resistors are in Ω, K = 1,000 Ω, M = 1,000 kΩ.
2. Abbreviation

RTL:
Retention Time Limited
This indicates that the retention time is limited for this item. After the discontinuation of this item inproduction, it will no longer be available.

NR:
Non Repairable Board Ass'y

MGF CHIP:
Metal Glaze Film Chip

C CHIP:
Ceramic Chip

COMPLX CMP:
Complex Component

W FLMPRF:
Wirewound Flameproof

C.B.A.:
Circuit Board Assembly

P.C.B.:
Printed Circuit Board

E.S.D.:
Electrostatically Sensitive Devices

3. **When replacing 0 Ω resistor, a wire can be substituted for it.**
4. **Since the UHF/VHF TUNER/TV DEMODULATOR UNIT (Ref. No. 743) has already been pre-adjusted at the factory, do not try to adjust the UHF/VHF TUNER/TV DEMODULATOR UNIT. The UHF/ VHF TUNER/TV DEMODULATOR UNIT replacement part is available as a complete assembly unit only.**
5. **EEP ROM IC (IC6005), MAIN C.B.A. replacement note:**
   After replacing EEP ROM IC (IC6005) or MAIN C.B.A., be sure to perform the "PG SHIFTER ADJUSTMENT" in ELECTRICAL ADJUSTMENT procedures.
6. **EEP ROM IC (IC8001), DVD Decoder C.B.A. replacement note:**
   After replacing EEP ROM IC (IC6005) or DVD Decoder C.B.A., confirm the Firmware version of DVD using Self-Diagnostic function.
   If the version is different than that indicated on the Firmware Disc, update it using the Firmware Disc. Refer to "HOW TO UPDATE THE FIRMWARE OF DVD."

11.2. MECHANICAL REPLACEMENT PARTS LIST

MECHANICAL REPLACEMENT PARTS

Ref. No.	Part No.	Part Name & Description	Remarks
1	VBSS0033	FULL ERASE HEAD	1
2	LSXK0094	MOTOR BLOCK UNIT	1
3	LSDB0045	TENSION ARM BOSS	1
4	LSXY0279	MECHANICAL CHASSIS SUB ASS'Y	1,2
5	LSMD0209	OPENER PIECE	1
8	VVGS0009	MAIN CAM GEAR KIT	2
9	LSDR0004	S REEL TABLE	1
10	LSDR0005	T REEL TABLE	1
11	LSEG0015	CYLINDER UNIT	1
12	VEHS0598	AUDIO CONTROL/ERASE HEAD UNIT	1
14	LSDG0112	LIFT GEAR	1
16	VXDS0213	LOADING POST BASE-S UNIT	1
17	VXDS0214	LOADING POST BASE-T UNIT	1
18	LSXL0079	PINCH ARM UNIT	1
19	LSDG0110	INTERMEDIATE GEAR A	1
20	LSXL0078	P5 ARM UNIT	1
21	LSML0131	DRIVE RACK ARM	1
22	LSXL0077	TENSION CONTROL ARM UNIT	1
27	VXLS1130	T BRAKE UNIT	1
29	VXLS1129	TENSION ARM UNIT	1
32	VXLS1104	CLEANER ARM UNIT	1
33	VDPS0269	CLEANER ROLLER	1
35	LSGQ0043	CUSHION,PLASTIC	4
38	LSMB0217	CASSETTE DOOR SPRING	4
41	VXPS0389	CENTER CLUTCH UNIT	2
42	VMBS1151	CHANGING GEAR SPRING	2
43	LSDG0114	CHANGING GEAR	2
44	VXLS1091	IDLER ARM UNIT	2
46	LSEM0056	CAPSTAN MOTOR ASS'Y	2
47	LSMM0003	MAIN ROD	2
48	LSJW0027	FLEXIBLE FLAT CABLE W/OUT PLUG	2
49	VXLS1099	S LOADING ARM UNIT	2
50	VXLS1098	T LOADING ARM UNIT	2
51	LSDG0116	REEL GEAR	2
52	LSDG0111	INTERMEDIATE GEAR B	2
53	LSMA0532	SUPPORT ANGLE	2
54	LSDV0009	CAPSTAN BELT SQUARE,ELASTOMER 2MM	2
56	LSPF0084	SHEET,POLYETHYLENE	5
58	LSXL0081	SS BRAKE ARM UNIT	2
59	LSMB0196	SS BRAKE SPRING	2
61	VXYS1347	CASSETTE UP ASS'Y	3,4
62	LSMA0352	TOP PLATE	3
64	LSMD0174	SIDE PLATE L	3
65	LSMD0173	SIDE PLATE R	3
66	LSMB0218	SUPPORT SPRING	3
67	LSML0096	OPENER LEVER	3
68	VXLS1111	DRIVE RACK UNIT	3
69	VXAS4423	HOLDER UNIT	3
70	VXLS1110	WIPER ARM UNIT	3
71	VYPS7135	FRONT PANEL ASS'Y	4
72	LSGP0278	CASSETTE DOOR-LID	4
73	LSKM0726	TOP COVER	4
74	LSMP0321	BOTTOM COVER	4
75	LSGH0044	REAR PANEL	4

Ref. No.	Part No.	Part Name & Description	Remarks
100	VKFS2235	BATTERY COVER	5
101	VKAS0059	FOOT	4
121	LSPG1257	PACKING CASE,PAPER	5
122	LSQF0580	FAN BAG	5
123	LSSQ0333	INFRARED REMOTE CONTROL UNIT	5
124	LSJA0372	VHF CONNECTING CABLE W/PLUG,0V	5
124	LSJA0274	VHF CONNECTING CABLE W/PLUG,0V	5
124	LSJA0328	VHF CONNECTING CABLE W/PLUG,0V	5
124	VJAS0212	VHF CONNECTING CABLE W/PLUG,0V	5
125	LSPN0234	FRONT CUSHION,STYROFOAM	5
126	LSPN0235	REAR CUSHION,STYROFOAM	5
127	CPS-1C	CHECK POINT LABEL	5
128	N9ZZ00000027	SECURITY TAG	5
230	VYPS7109	TRAY COVER	4
242	LSXK0089	DVD UNIT	4
278	LSGF0044	BARRIER	4
279	LSMP0382	FRONT COVER	4
280	LSMP0348	REAR COVER	4
281	CKS-07-L	CLAMPER	4
282	VEKS5835	GROUNDING WIRE	4
283	LSMT0068	CUSHION,RUBBER	4
286	LSQL1184	CAUTION LABEL A	4
287	LSQL1185	CAUTION LABEL B	4
288	LSGF0046	SHEET HOLDER	4
289	LSMF0071	SHEET,NYLON-RAYON	4
305	LSMA0558	DVD HOLDER RIGHT	4
306	LSMA0557	DVD HOLDER LEFT	4
311	LSMF0081	SHEET,NYLON-RAYON	4
312	LMMY0030	HEAT SHEET,SI	4
401	VHDS0475	SCREW,STEEL	1
405	XTV3+6J	TAPPING SCREW,STEEL	4
410	VHDS0498	SCREW W/WASHER,STEEL	1
414	VHNS0070	MAIN CAM PUSH NUT,STEEL	1
422	XWGV2D5G	WASHER,NYLON	2
424	XYC26+CF8	SCREW W/WASHER,STEEL	4
447	VHDS0310	SCREW,STEEL	4
458	XTV3+8J	TAPPING SCREW,STEEL	4
460	XTN4+12A	TAPPING SCREW,STEEL	4
473	XYN26+C6	SCREW W/WASHER,STEEL	1
475	XTV26+5FJ	TAPPING SCREW,STEEL	2
478	VHDS0495	SCREW,STEEL	2
498	XYE3+FJ8	SCREW,STEEL	4
502	LSHD0075	TAPPING SCREW,STEEL	4
504	XTB3+8J	SCREW,STEEL	4
505	XTB3+8JFZ	TAPPING SCREW,STEEL	4
508	XTB26+6J	TAPPING SCREW,STEEL	2
711	PNA4611M00HD	INFRARED RECEIVER UNIT	4
716	LSSZ0005	LED DISPLAY PANEL	4
737	VEKS5836	GROUNDING WIRE	4
741	LSJA0360	AC CORD W/PLUG,AC 120V	4 ⚠
741	LSJA0358	AC CORD W/PLUG,AC 120V	4 ⚠
741	LSJA0359	AC CORD W/PLUG,AC 120V	4 ⚠
741	LSJA0361	AC CORD W/PLUG,AC 120V	4 ⚠

Ref. No.	Part No.	Part Name & Description	Remarks
741	LSJA0348	AC CORD W/PLUG,AC 120V	4 ⚠
743	ENG56717G1	TUNER,UHF/VHF NR	4
771	EYF52BC	FUSE HOLDER	4
791	VEKS5773	CONNECTOR CABLE W/PLUG,DC 5V	4
E10	LSEP2015HA	MAIN C.B.A.	4 RTL
E20	LSEP2016A	OPERATION C.B.A.	4 RTL
E30	LSEP2007A	DVD DECODER C.B.A.	4 RTL

SERVICE FIXTURES AND TOOLS

Ref. No.	Part No.	Part Name & Description	Remarks
	VFMS0003H6	VHS ALIGNMENT TAPE	
	VFKS0081	GREASE	
	VFK0329	POST ADJUSTMENT DRIVER	
	VFK27	HEAD CLEANING STICK	
	VFK0330	H-POSITION ADJUSTMENT DRIVER	
	DVDT-S01	DVD TEST DISC	AVC
	LSUA0034	EXTENSION CABLE	

11.3. ELECTRICAL REPLACEMENT PARTS LIST

PRINTED CIRCUIT BOARD ASSEMBLY

Ref. No.	Part No.	Part Name & Description	Remarks
E10	LSEP2015HA	MAIN C.B.A.	E.S.D. RTL
E20	LSEP2016A	OPERATION C.B.A.	E.S.D. RTL
E30	LSEP2007A	DVD DECODER C.B.A.	E.S.D. RTL

11.3.1. MAIN C.B.A.

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC1001	0N3131-R.KT	IC, LINEAR	⚠
IC1001	PS2501-1-X	IC, LINEAR	⚠
IC1001	0N3131-S.KT	IC, LINEAR	⚠
IC1002	TA76431ASTP6	IC, LINEAR	
IC1002	C0DAEMZ00001	IC, LINEAR	
IC1003	C5HAZKD00001	IC, LINEAR	
IC1501	C5HABZZ00101	IC, LINEAR	⚠
IC1502	0N3131-R.KT	IC, LINEAR	⚠
IC1502	PS2501-1-X	IC, LINEAR	⚠
IC1502	0N3131-S.KT	IC, LINEAR	⚠
IC1503	TA76431ASTP6	IC, LINEAR	
IC1503	C0DAEMZ00001	IC, LINEAR	
IC1504	C0DAZJG00019	IC, LINEAR	
IC3001	NN13400A	IC, LINEAR	
IC3002	C0JBAR000292	IC, CMOS STANDARD LOGIC	E.S.D.
IC3002	CD4053BCM	IC, CMOS STANDARD LOGIC	E.S.D.
IC3002	C0JBAR000338	IC, CMOS STANDARD LOGIC	E.S.D.
IC3101	MN3885S	IC, LINEAR	E.S.D.
IC4201	AN3663FBP-V	IC, LINEAR	E.S.D.
IC4303	UPC4570G	IC, LINEAR	

Ref. No.	Part No.	Part Name & Description	Remarks
IC4304	C0JBAR000292	IC, CMOS STANDARD LOGIC	E.S.D.
IC4304	CD4053BCM	IC, CMOS STANDARD LOGIC	E.S.D.
IC4304	C0JBAR000338	IC, CMOS STANDARD LOGIC	E.S.D.
IC6001	MN101D06FPP	IC, 8BIT MICROCONTROLLER	E.S.D.
IC6002	B3NAA0000049	PHOTO INTERRUPUTER	
IC6003	B3NAA0000049	PHOTO INTERRUPUTER	
IC6004	C0EBJ0000080	IC, CMOS STANDARD LOGIC	E.S.D.
IC6004	C0EBJ0000099	IC, CMOS STADNARD LOGIC	E.S.D.
IC6004	RN5VS47CA-TR	IC, CMOS STADNARD LOGIC	E.S.D.
IC6005	KS24C011CS	IC, 1K EEP ROM	E.S.D.
IC6005	AT24C01A10SI	IC, 1K EEP ROM	E.S.D.
IC6005	C0ZBZ0000015	IC, 1K EEP ROM	E.S.D.
IC6005	C3EBCC000038	IC, 1K EEP ROM	E.S.D.
IC6005	KS24C011IS	IC, 1K EEP ROM	E.S.D.
IC6005	M24C01-MN6	IC, 1K EEP ROM	E.S.D.

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q1001	2SC4533LP.KT	TRANSISTOR SI NPN	⚠
Q1001	2SC4953LP.KT	TRANSISTOR SI NPN	⚠
Q1001	2SC5130LF608	TRANSISTOR SI NPN	⚠
Q1002	2SD1458	TRANSISTOR SI NPN	
Q1002	2SD225900A	TRANSISTOR SI NPN	
Q1051	2SD2159-T	TRANSISTOR SI NPN	
Q1051	2SD1581-T	TRANSISTOR SI NPN	
Q1052	2SD601A-RS	TRANSISTOR SI NPN CHIP	
Q1052	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q1053	2SD235800A	TRANSISTOR SI NPN CHIP	
Q1053	B1AAQB000002	TRANSISTOR SI NPN CHIP	
Q1501	2SD0601A0L	TRANSISTOR SI NPN CHIP	
Q1501	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q1502	XP132A1275SR	TRANSISTOR FET	
Q3001	2SB0709A0L	TRANSISTOR SI PNP CHIP	
Q3001	B1ADCF000001	TRANSISTOR SI PNP CHIP	
Q3002	2SB709A-RS	TRANSISTOR SI PNP CHIP	
Q3002	B1ADCF000001	TRANSISTOR SI PNP CHIP	
Q3003	2SD601A-RS	TRANSISTOR SI NPN CHIP	
Q3003	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q3004	2SD601A-RS	TRANSISTOR SI NPN CHIP	
Q3004	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q3005	2SB709A-RS	TRANSISTOR SI PNP CHIP	
Q3005	B1ADCF000001	TRANSISTOR SI PNP CHIP	
Q3007	2SD601A-RS	TRANSISTOR SI NPN CHIP	
Q3007	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q3008	2SB709A-RS	TRANSISTOR SI PNP CHIP	
Q3008	B1ADCF000001	TRANSISTOR SI PNP CHIP	
Q3009	2SD601A-RS	TRANSISTOR SI NPN CHIP	
Q3009	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q3011	UNR521200L	TRANSISTOR SI NPN CHIP	
Q3011	B1GBCFLL0012	TRANSISTOR SI NPN CHIP	
Q3011	MUN5212T1	TRANSISTOR SI NPN CHIP	
Q3601	2SD601A-RS	TRANSISTOR SI NPN CHIP	
Q3601	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q3602	2SD601A-RS	TRANSISTOR SI NPN CHIP	
Q3602	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q3603	2SD601A-RS	TRANSISTOR SI NPN CHIP	
Q3603	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q3604	2SB709A-RS	TRANSISTOR SI PNP CHIP	
Q3604	B1ADCF000001	TRANSISTOR SI PNP CHIP	
Q3605	2SB709A-RS	TRANSISTOR SI PNP CHIP	
Q3605	B1ADCF000001	TRANSISTOR SI PNP CHIP	
Q3606	2SB709A-RS	TRANSISTOR SI PNP CHIP	
Q3606	B1ADCF000001	TRANSISTOR SI PNP CHIP	
Q3610	2SB0709A0L	TRANSISTOR SI PNP CHIP	
Q3610	B1ADCF000001	TRANSISTOR SI PNP CHIP	
Q3611	2SB0709A0L	TRANSISTOR SI PNP CHIP	
Q3611	B1ADCF000001	TRANSISTOR SI PNP CHIP	
Q3612	2SB0709A0L	TRANSISTOR SI PNP CHIP	
Q3612	B1ADCF000001	TRANSISTOR SI PNP CHIP	
Q3613	2SB0709A0L	TRANSISTOR SI PNP CHIP	
Q3613	B1ADCF000001	TRANSISTOR SI PNP CHIP	

Ref. No.	Part No.	Part Name & Description	Remarks
Q3614	2SB0709A0L	TRANSISTOR SI PNP CHIP	
Q3614	B1ADCF000001	TRANSISTOR SI PNP CHIP	
Q4001	2SB1218ARS	TRANSISTOR SI PNP CHIP	
Q4001	B1ADCF000063	TRANSISTOR SI PNP CHIP	
Q4002	2SD1819A-RS	TRANSISTOR SI NPN CHIP	
Q4003	2SD1819A-RS	TRANSISTOR SI NPN CHIP	
Q4004	UNR511500L	TRANSISTOR SI PNP CHIP	
Q4004	B1GDCFJJ0025	TRANSISTOR SI PNP CHIP	
Q4005	UNR521500L	TRANSISTOR SI NPN CHIP	
Q4005	B1GBCFJA0006	TRANSISTOR SI NPN CHIP	
Q4006	UNR521500L	TRANSISTOR SI NPN CHIP	
Q4006	B1GBCFJA0006	TRANSISTOR SI NPN CHIP	
Q4007	UNR521500L	TRANSISTOR SI NPN CHIP	
Q4007	B1GBCFJA0006	TRANSISTOR SI NPN CHIP	
Q4008	UNR521500L	TRANSISTOR SI NPN CHIP	
Q4008	B1GBCFJA0006	TRANSISTOR SI NPN CHIP	
Q4009	UNR521500L	TRANSISTOR SI NPN CHIP	
Q4009	B1GBCFJA0006	TRANSISTOR SI NPN CHIP	
Q4101	2SD601A-RS	TRANSISTOR SI NPN CHIP	
Q4101	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q4304	UNR221200L	TRANSISTOR SI NPN CHIP	
Q4304	B1GBCFLL0002	TRANSISTOR SI NPN CHIP	
Q4305	2SD0601A0L	TRANSISTOR SI NPN CHIP	
Q4305	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q6001	2SD1819A-RS	TRANSISTOR SI NPN CHIP	
Q6001	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q6002	2SB709A-RS	TRANSISTOR SI PNP CHIP	
Q6002	B1ADCF000001	TRANSISTOR SI PNP CHIP	
Q6003	2SD1819A-RS	TRANSISTOR SI NPN CHIP	
Q6003	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q6005	2SB709A-RS	TRANSISTOR SI PNP CHIP	
Q6005	B1ADCF000001	TRANSISTOR SI PNP CHIP	
Q6006	2SD1819A-RS	TRANSISTOR SI NPN CHIP	
Q6006	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q6009	VEKS5707	PHOTO SENSOR UNIT	
Q6010	VEKS5707	PHOTO SENSOR UNIT	

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D1001	B0EDKR000004	DIODE SI	⚠
D1002	B0HAHP000014	DIODE SI	
D1002	B0HAJP000007	DIODE SI	
D1002	B0HAMP000061	DIODE SI	
D1003	B0HAHP000014	DIODE SI	
D1003	B0HAJP000007	DIODE SI	
D1003	B0HAMP000061	DIODE SI	
D1005	B0HAHP000014	DIODE SI	
D1005	B0HAJP000007	DIODE SI	
D1005	B0HAMP000061	DIODE SI	
D1006	ERB32-01L3	DIODE SI	
D1006	B0HAML000013	DIODE SI	
D1006	B0HAML000014	DIODE SI	
D1006	RGP15GL-5008	DIODE SI	
D1008	ERB81-004V1	DIODE SI	
D1008	B0JAME000049	DIODE SI	
D1008	B0JANE000011	DIODE SI	
D1009	B0JCME000028	DIODE SI	
D1009	B0JCMD000006	DIODE SI	
D1009	B0JCMD000014	DIODE SI CHIP	
D1009	MA2YD2300L	DIODE SI	
D1009	SFPJ-53	DIODE SI	
D1010	ERZV10V361CS	SUEGE ABSORBER	⚠
D1010	D4EAA3610001	SURGE ABSORBER	⚠
D1015	MA2180LA	DIODE ZENER 18V	⚠
D1015	1N4746A-T	DIODE ZENER 18V	⚠
D1015	1N4746ARL	DIODE ZENER 18V	⚠
D1016	MA2C165001VT	DIODE SI	
D1016	B0AACK000004	DIODE SI	
D1016	1SS119	DIODE SI	
D1051	MA4110N-H	DIODE ZENER 11V	
D1080	ERB84-009V1	DIODE SI	
D1080	EK19V1	DIODE SI	
D1501	DB105G	DIODE SI	⚠
D1501	B0EBKR000003	DIODE SI	⚠
D1501	B0EBKR000020	DIODE SI	⚠
D1502	B0JAMD000012	DIODE SI	
D1502	B0JAGE000001	DIODE SI	
D1502	1GWJ43TPA3	DIODE SI	
D1503	B0HAJL000001	DIODE SI	
D1503	B0HAGP000004	DIODE SI	
D1504	B0HAJL000001	DIODE SI	
D1504	B0HAGP000004	DIODE SI	
D1505	B0HAJL000001	DIODE SI	
D1505	B0HAGP000004	DIODE SI	
D1506	B0HAJL000001	DIODE SI	
D1506	B0HAGP000004	DIODE SI	
D1507	B0HAHP000014	DIODE SI	
D1507	B0HAJP000007	DIODE SI	
D1507	B0HAMP000061	DIODE SI	
D1508	ERB32-01L3	DIODE SI	
D1508	B0HAML000013	DIODE SI	

Ref. No.	Part No.	Part Name & Description	Remarks
D1508	B0HAML000014	DIODE SI	
D1508	RGP15GL-5008	DIODE SI	
D1509	ERC81-006L7	DIODE SI	
D1509	B0JAPG000021	DIODE SI	
D1509	RK46LF015302	DIODE SI	
D3006	MA4047	DIODE ZENER 4.7V	
D3006	B0BA4R600003	DIODE ZENER 4.7V	
D3006	MTZJT-774.7A	DIODE ZENER 4.7V	
D3006	MTZJT-774.7C	DIODE ZENER 4.7V	
D3006	RD4.7ESAB	DIODE ZENER 4.7V	
D3007	MA4047	DIODE ZENER 4.7V	
D3007	B0BA4R600003	DIODE ZENER 4.7V	
D3007	MTZJT-774.7A	DIODE ZENER 4.7V	
D3007	MTZJT-774.7C	DIODE ZENER 4.7V	
D3007	RD4.7ESAB	DIODE ZENER 4.7V	
D3601	MA4047	DIODE ZENER 4.7V	
D3601	B0BA4R600003	DIODE ZENER 4.7V	
D3601	MTZJT-774.7A	DIODE ZENER 4.7V	
D3601	MTZJT-774.7C	DIODE ZENER 4.7V	
D3601	RD4.7ESAB	DIODE ZENER 4.7V	
D3602	MA4047	DIODE ZENER 4.7V	
D3602	B0BA4R600003	DIODE ZENER 4.7V	
D3602	MTZJT-774.7A	DIODE ZENER 4.7V	
D3602	MTZJT-774.7C	DIODE ZENER 4.7V	
D3602	RD4.7ESAB	DIODE ZENER 4.7V	
D3603	MA4047	DIODE ZENER 4.7V	
D3603	B0BA4R600003	DIODE ZENER 4.7V	
D3603	MTZJT-774.7A	DIODE ZENER 4.7V	
D3603	MTZJT-774.7C	DIODE ZENER 4.7V	
D3603	RD4.7ESAB	DIODE ZENER 4.7V	
D3604	MA4047	DIODE ZENER 4.7V	
D3604	B0BA4R600003	DIODE ZENER 4.7V	
D3604	MTZJT-774.7A	DIODE ZENER 4.7V	
D3604	MTZJT-774.7C	DIODE ZENER 4.7V	
D3604	RD4.7ESAB	DIODE ZENER 4.7V	
D3605	MA4047	DIODE ZENER 4.7V	
D3605	B0BA4R600003	DIODE ZENER 4.7V	
D3605	MTZJT-774.7A	DIODE ZENER 4.7V	
D3605	MTZJT-774.7C	DIODE ZENER 4.7V	
D3605	RD4.7ESAB	DIODE ZENER 4.7V	
D3606	MA4047	DIODE ZENER 4.7V	
D3606	B0BA4R600003	DIODE ZENER 4.7V	
D3606	MTZJT-774.7A	DIODE ZENER 4.7V	
D3606	MTZJT-774.7C	DIODE ZENER 4.7V	
D3606	RD4.7ESAB	DIODE ZENER 4.7V	
D3607	MA4047	DIODE ZENER 4.7V	
D3607	B0BA4R600003	DIODE ZENER 4.7V	
D3607	MTZJT-774.7A	DIODE ZENER 4.7V	
D3607	MTZJT-774.7C	DIODE ZENER 4.7V	
D3607	RD4.7ESAB	DIODE ZENER 4.7V	
D3608	MA4047	DIODE ZENER 4.7V	
D3608	B0BA4R600003	DIODE ZENER 4.7V	
D3608	MTZJT-774.7A	DIODE ZENER 4.7V	
D3608	MTZJT-774.7C	DIODE ZENER 4.7V	

Ref. No.	Part No.	Part Name & Description	Remarks
D3608	RD4.7ESAB	DIODE ZENER 4.7V	
D3609	MA4047	DIODE ZENER 4.7V	
D3609	B0BA4R600003	DIODE ZENER 4.7V	
D3609	MTZJT-774.7A	DIODE ZENER 4.7V	
D3609	MTZJT-774.7C	DIODE ZENER 4.7V	
D3609	RD4.7ESAB	DIODE ZENER 4.7V	
D3610	MA4047	DIODE ZENER 4.7V	
D3610	B0BA4R600003	DIODE ZENER 4.7V	
D3610	MTZJT-774.7A	DIODE ZENER 4.7V	
D3610	MTZJT-774.7C	DIODE ZENER 4.7V	
D3610	RD4.7ESAB	DIODE ZENER 4.7V	
D4209	MA2C165001VT	DIODE SI	
D4209	B0AACK000004	DIODE SI	
D4209	1SS119	DIODE SI	
D6001	VEKS5708	SENSOR LED UNIT	
D6003	MA2C165001VT	DIODE SI	
D6003	B0AACK000004	DIODE SI	
D6003	1SS119	DIODE SI	

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R1001	VRESC2TK275	CARBON 1/2W 2.7M	⚠
R1001	VRESC2TK275T	CARBON 1/2W 2.7M	⚠
R1003	D0AF334JA038	CARBON 1/2W 330K	
R1004	ERG2SJ333H	METAL OXIDE 2W 33K	
R1005	ERG1SJ560P	METAL OXIDE 1W 56	
R1006	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R1007	ERDS2TJ101	CARBON 1/4W 100	
R1008	ERDS2TJ392	CARBON 1/4W 3.9K	
R1010	ERD25FJ100P	CARBON 1/4W 10	⚠
R1010	VRESF4FJ100P	CARBON 1/4W 10	⚠
R1014	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R1015	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R1016	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R1017	D1BD2431A016	MGF CHIP 2.43K	
R1018	D0HD222ZA002	MGF CHIP 2.2K	
R1019	ERDS2T0	CARBON 1/4W 0	
R1025	ERDS2TJ300	CARBON 1/2W 30	
R1026	ERDS2TJ300	CARBON 1/2W 30	
R1051	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R1052	ERDS2TJ153	CARBON 1/4W 15K	
R1053	ERDS2TJ153	CARBON 1/4W 15K	
R1057	ERDS2TJ331	CARBON 1/4W 330	
R1058	ERDS2TJ104	CARBON 1/4W 100K	
R1080	ERDS2TJ103	CARBON 1/4W 10K	
R1501	D0AF473JA038	CARBON 1/2W 47K	
R1502	ERD2FCG681V	FUSE 1/4W 680	⚠
R1504	ERX2SJR22P	METAL FILM 2W 0.22	
R1505	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R1507	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R1508	ERG2SJ104P	METAL OXIDE 2W 100K	
R1510	ERDS2TJ100T	CARBON 1/4W 10	

Ref. No.	Part No.	Part Name & Description	Remarks
R1511	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R1512	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R1513	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R1514	D1BD2431A016	MGF CHIP 2.43K	
R1515	D0HD222ZA002	MGF CHIP 2.2K	
R1516	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R1518	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R1519	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R1520	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R1521	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R1526	ERJ14YJ181H	MGF CHIP1/4W 180	
R1527	ERJ14YJ181H	MGF CHIP1/4W 180	
R3001	ERJ6GEYJ750V	MGF CHIP 1/10W 75	
R3002	ERDS2TJ561	CARBON 1/4W 560	
R3003	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R3004	ERJ6GEYJ750V	MGF CHIP 1/10W 75	
R3005	ERJ6GEYJ273V	MGF CHIP 1/10W 27K	
R3006	ERDS2TJ152	CARBON 1/4W 1.5K	
R3007	ERDS2TJ152	CARBON 1/4W 1.5K	
R3008	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R3009	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R3012	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R3017	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3018	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R3021	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R3022	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R3023	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R3027	ERJ6GEYJ821V	MGF CHIP 1/10W 820	
R3029	ERJ6GEYJ125V	MGF CHIP 1/10W 1.2M	
R3030	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R3031	ERJ6GEYJ474V	MGF CHIP 1/10W 470K	
R3032	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R3033	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R3034	ERJ6GEYJ121V	MGF CHIP 1/10W 120	
R3035	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3036	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R3041	ERJ6GEYJ750V	MGF CHIP 1/10W 75	
R3043	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R3044	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R3045	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R3046	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3047	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R3048	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R3049	ERJ6GEYJ563V	MGF CHIP 1/10W 56K	
R3050	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3054	ERJ6GEYJ563V	MGF CHIP 1/10W 56K	
R3055	ERJ6GEYJ273V	MGF CHIP 1/10W 27K	
R3056	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R3057	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R3058	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R3059	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R3060	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R3061	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R3098	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	

Ref. No.	Part No.	Part Name & Description	Remarks
R3103	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R3301	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3302	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R3305	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R3601	ERJ6GEYJ563V	MGF CHIP 1/10W 56K	
R3602	ERJ6GEYJ273V	MGF CHIP 1/10W 27K	
R3603	ERJ6GEYJ563V	MGF CHIP 1/10W 56K	
R3604	ERJ6GEYJ273V	MGF CHIP 1/10W 27K	
R3605	ERJ6GEYJ563V	MGF CHIP 1/10W 56K	
R3606	ERJ6GEYJ273V	MGF CHIP 1/10W 27K	
R3610	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R3611	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3612	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R3613	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3614	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R3615	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3616	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R3617	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3618	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R3619	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3620	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R3621	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3622	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R3623	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R3624	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R3626	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R3627	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R3628	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R3629	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R3630	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R3631	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R3632	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R3633	ERJ6GEYJ273V	MGF CHIP 1/10W 27K	
R3634	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R3635	ERJ6GEYJ273V	MGF CHIP 1/10W 27K	
R3636	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R3637	ERJ6GEYJ273V	MGF CHIP 1/10W 27K	
R3638	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R3639	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R3640	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R3641	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R3642	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R3643	ERDS2TJ471T	CARBON 1/4W 470	
R3644	ERDS2TJ471T	CARBON 1/4W 470	
R3645	ERDS2TJ471T	CARBON 1/4W 470	
R3646	ERDS2TJ471T	CARBON 1/4W 470	
R3647	ERDS2TJ471T	CARBON 1/4W 470	
R3648	J0JBC0000019	BEAD INDUCTOR	
R3649	ERDS2TJ750T	CARBON 1/4W 75	
R3650	J0JBC0000019	BEAD INDUCTOR	
R3651	ERDS2TJ750T	CARBON 1/4W 75	
R3652	ERDS2TJ750T	CARBON 1/4W 75	
R3653	ERDS2TJ103	CARBON 1/4W 10K	
R3654	ERDS2TJ223	CARBON 1/4W 22K	

Ref. No.	Part No.	Part Name & Description	Remarks
R3658	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R3659	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3660	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3661	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R3662	ERDS2TJ473T	CARBON 1/4W 47K	
R4001	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4002	ERJ6GEYJ334V	MGF CHIP 1/10W 330K	
R4003	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R4004	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4005	ERJ6GEYJ225V	MGF CHIP 1/10W 2.2M	
R4006	ERJ6GEYJ681V	MGF CHIP 1/10W 680	
R4007	ERJ6GEYJ821V	MGF CHIP 1/10W 820	
R4008	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R4010	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4011	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R4012	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R4014	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4015	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R4017	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4028	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R4102	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4103	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R4201	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4202	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4203	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R4204	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R4205	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4206	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4207	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R4208	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R4209	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4210	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4213	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R4214	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R4218	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4223	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4224	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4225	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4226	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R4228	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4229	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4230	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4231	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R4232	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R4233	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4234	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4235	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R4236	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R4243	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R4244	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R4316	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4317	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4318	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4319	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	

Ref. No.	Part No.	Part Name & Description	Remarks
R4320	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4321	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R4322	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R4323	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R4324	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R4325	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4326	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R4327	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4453	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4455	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R4802	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R6001	ERDS2TJ101	CARBON 1/4W 100	
R6003	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6005	ERJ6GEYJ563V	MGF CHIP 1/10W 56K	
R6006	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6007	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R6010	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6012	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6013	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6018	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6019	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6021	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6024	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6026	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6027	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6028	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6029	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R6030	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6031	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6033	ERDS2TJ681	CARBON 1/4W 680	
R6034	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6035	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6036	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6037	ERJ6GEYJ391V	MGF CHIP 1/10W 390	
R6039	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6045	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R6049	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6052	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6057	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6059	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6060	ERJ6GEYJ105V	MGF CHIP 1/10W 1M	
R6062	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R6063	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R6064	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R6066	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6067	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R6069	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6070	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6072	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6073	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6074	ERDS2TJ272	CARBON 1/4W 2.7K	
R6076	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6077	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6078	ERJ6GEYJ221V	MGF CHIP 1/10W 220	

Ref. No.	Part No.	Part Name & Description	Remarks
R6079	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6080	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6081	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6082	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6085	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6086	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6087	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6088	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6089	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6092	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6099	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6109	ERJ6GEYJ183V	MGF CHIP 1/10W 18K	
R6110	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6202	ERJ6GEYJ274V	MGF CHIP 1/10W 270K	
R6203	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6204	ERJ6GEYJ334V	MGF CHIP 1/10W 330K	
R6205	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6228	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R6230	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6231	ERJ6GEYJ683V	MGF CHIP 1/10W 68K	
R6232	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R6233	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R6236	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6237	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6238	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6239	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6240	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C1001	ECQU2A823MLA	POLYESTER 250V 0.082UF	⚠
C1001	LSCFQ2A823MC	POLYESTER 250V 0.082UF	⚠
C1002	ECKATS332ME8	CERAMIC 250V 3300PF	⚠
C1002	ECKDNB332ME8	CERAMIC 125V 3300PF	⚠
C1002	ECKETS332ME8	CERAMIC 125V 3300PF	⚠
C1002	VCKST3G332MX	CERAMIC 250V 3300PF	⚠
C1002	VCKSU3D332MX	CERAMIC 125V 3300PF	⚠
C1003	ECKATS222ME	CERAMIC 250V 2200PF	⚠
C1003	ECKETS222ME	CERAMIC 250V 2200PF	⚠
C1003	VCKST4D222MX	CERAMIC 250V 2200PF	⚠
C1003	VCKST5D222MX	CERAMIC 250V 2200PF	⚠
C1003	VCKSU4D222MX	CERAMIC 125V 2200PF	⚠
C1003	VCKSU5D222MX	CERAMIC 125V 2200PF	⚠
C1004	ECEA2DU820YE	ELECTROLYTIC 200V 82UF	⚠
C1004	F2A2D8200001	ELECTROLYTIC 220V 82UF	⚠
C1004	F2A2D8200003	ELECTROLYTIC 200V 82UF	⚠
C1004	VCESR2D820XE	ELECTROLYTIC 200V 82UF	⚠
C1005	ECA2DHG4R7B	ELECTROLYTIC 200V 4.7UF	
C1006	ECKR2H221KB5	CERAMIC 500V 220PF	
C1007	ECJ2VB1C224K	C CHIP 16V 0.22UF	

Ref. No.	Part No.	Part Name & Description	Remarks
C1009	VCYSBRE183KX	CERAMIC 25V 0.018UF	
C1010	ECJ2VC1H101J	C CHIP 50V 100PF	
C1011	ECA1HHG4R7I	ELECTROLYTIC 50V 4.7UF	
C1012	ECEA1PEE331	ELECTROLYTIC 18V 330UF	
C1013	ECA1EM331B	ELECTROLYTIC 25V 330UF	
C1016	ECEA1PEE331	ELECTROLYTIC 18V 330UF	
C1017	ECA0JM102B	ELECTROLYTIC 6.3V 1000UF	
C1018	ECJ2VB1E104K	C CHIP 25V 0.1UF	
C1019	ECA0JM471	ELECTROLYTIC 6.3V 470UF	
C1020	ECA1VM470I	ELECTROLYTIC 35V 47UF	
C1021	ECUV1H334ZFN	C CHIP 50V 0.33UF	
C1022	ECA1EM101I	ELECTROLYTIC 25V 100UF	
C1025	ECKDRS101MBY	CERAMIC 125V 100PF	⚠
C1025	ECKATS101MB	CERAMIC 250V 100PF	⚠
C1025	ECKETS101MB	CERAMIC 125V 100PF	⚠
C1025	ECKMRS101MBY	CERAMIC 125V 100PF	⚠
C1025	VCKSTJG101KW	CERAMIC 125V 100PF	⚠
C1025	VCKSTLG101KW	CERAMIC 125V 100PF	⚠
C1025	VCKSUJD101KW	CERAMIC 125V 100PF	⚠
C1025	VCKSULD101KW	CERAMIC 125V 100PF	⚠
C1028	ECKATS332ME8	CERAMIC 250V 3300PF	⚠
C1028	ECKDNB332ME8	CERAMIC 125V 3300PF	⚠
C1028	ECKETS332ME8	CERAMIC 125V 3300PF	⚠
C1028	VCKST3G332MX	CERAMIC 250V 3300PF	⚠
C1028	VCKSU3D332MX	CERAMIC 125V 3300PF	⚠
C1029	ECJ2VC1H101J	C CHIP 50V 100PF	
C1030	VCYSBRE183KX	CERAMIC 25V 0.018UF	
C1051	ECEA1HKAR47	ELECTROLYTIC 50V 0.47UF	
C1052	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C1058	ECEA0JEE101	ELECTROLYTIC 6.3V 100UF	
C1059	ECEA1CKA220	ELECTROLYTIC 16V 22UF	
C1060	ECEA1CKA470	ELECTROLYTIC 16V 47UF	
C1080	EEUFD1V331LB	ELECTROLYTIC 35V 330UF	
C1501	ECKATS222ME	CERAMIC 250V 2200PF	⚠
C1501	ECKETS222ME	CERAMIC 250V 2200PF	⚠
C1501	VCKST4D222MX	CERAMIC 250V 2200PF	⚠
C1501	VCKST5D222MX	CERAMIC 250V 2200PF	⚠
C1501	VCKSU4D222MX	CERAMIC 125V 2200PF	⚠
C1501	VCKSU5D222MX	CERAMIC 125V 2200PF	⚠
C1502	ECA1HHG220B	ELECTROLYTIC 50V 22UF	
C1503	ECJ2VC1H471J	C CHIP 50V 470PF	
C1504	ECEA2DU820YE	ELECTROLYTIC 200V 82UF	⚠
C1504	F2A2D8200001	ELECTROLYTIC 220V 82UF	⚠
C1504	F2A2D8200003	ELECTROLYTIC 200V 82UF	⚠
C1504	VCESR2D820XE	ELECTROLYTIC 200V 82UF	⚠
C1505	F1B3D471A011	CERAMIC 2KV 470PF	
C1506	ECKR2H221KB5	CERAMIC 500V 220PF	
C1507	ECJ2VB1E104K	C CHIP 25V 0.1UF	
C1508	ECA2DHG4R7B	ELECTROLYTIC 200V 4.7UF	
C1509	ECJ2VB1H821K	C CHIP 50V 820PF	

Ref. No.	Part No.	Part Name & Description	Remarks
C1510	ECEA1PEE331	ELECTROLYTIC 18V 330UF	
C1511	F2A0J2220018	ELECTROLYTIC 6.3V 2200UF	
C1512	ECJ2VB1E104K	C CHIP 25V 0.1UF	
C1513	ECA1CHG470B	ELECTROLYTIC 16V 47UF	
C1514	ECJ2YB1C334K	C CHIP 16V 0.33UF	
C1515	ECA0JFE102XE	ELECTROLYTIC 6.3V 1000UF	
C1516	ECEA1PEE331	ELECTROLYTIC 18V 330UF	
C1517	ECJ2VB1E104K	C CHIP 25V 0.1UF	
C1518	ECA1CM331B	ELECTROLYTIC 16V 330UF	
C1519	ECA0JFE102XE	ELECTROLYTIC 6.3V 1000UF	
C1520	ECJ2VB1H332K	C CHIP 50V 3300PF	
C3001	ECA0JM471	ELECTROLYTIC 6.3V 470UF	
C3002	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C3003	ECEA1CKA470	ELECTROLYTIC 16V 47UF	
C3004	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3005	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C3008	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C3009	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C3014	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3015	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3017	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C3018	ECJ2VC1H181J	C CHIP 50V 180PF	
C3019	ECJ2VC1H560J	C CHIP 50V 56PF	
C3021	ECJ2VF1C224Z	C CHIP 16V 0.22UF	
C3022	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3023	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C3024	ECEA0JKA470	ELECTROLYTIC 6.3V 47UF	
C3025	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3026	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3027	ECJ2VF1C224Z	C CHIP 16V 0.22UF	
C3028	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C3029	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3030	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C3031	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2UF	
C3032	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2UF	
C3033	ECEA0JKA470	ELECTROLYTIC 6.3V 47UF	
C3034	ECJ2VF1C224Z	C CHIP 16V 0.22UF	
C3035	ECJ2VC1H680J	C CHIP 50V 68PF	
C3036	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3037	ECEA0JKA220	ELECTROLYTIC 6.3V 22UF	
C3038	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2UF	
C3039	ECJ2VB1H822K	C CHIP 50V 8200PF	
C3043	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3044	ECEA1HKAR47	ELECTROLYTIC 50V 0.47UF	
C3045	ECJ2VF1C474Z	C CHIP 16V 0.47UF	
C3047	ECJ2VC1H181J	C CHIP 50V 180PF	
C3048	ECJ2VC1H560J	C CHIP 50V 56PF	
C3049	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3050	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3051	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C3052	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3053	ECEA1HKAR47	ELECTROLYTIC 50V 0.47UF	
C3054	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2UF	
C3055	ECJ2VB1H392K	C CHIP 50V 3900PF	

Ref. No.	Part No.	Part Name & Description	Remarks
C3056	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C3062	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3073	ECJ2VC1H101J	C CHIP 50V 100PF	
C3101	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C3102	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3104	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3105	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3106	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3108	ECJ2VB1H102K	C CHIP 50V 1000PF	
C3109	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C3302	ECEA1HKAR47	ELECTROLYTIC 50V 0.47UF	
C3303	ECJ2VC1H121J	C CHIP 50V 120PF	
C3306	ECEA1HKAR47	ELECTROLYTIC 50V 0.47UF	
C3308	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3501	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3502	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3503	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3504	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3505	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3506	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3507	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3508	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3514	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C3515	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C3517	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3518	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3519	ECJ2VB1H102K	C CHIP 50V 1000PF	
C3601	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C3602	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C3603	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C3604	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3605	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3606	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3607	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C3608	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C3609	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C3610	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C3611	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C3614	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C3615	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C3616	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C3617	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3618	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3619	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3620	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C3621	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C3622	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C3623	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C3624	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C3630	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3631	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3632	ECA0JM471	ELECTROLYTIC 6.3V 470UF	
C3633	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3634	ECA0JM471	ELECTROLYTIC 6.3V 470UF	

Ref. No.	Part No.	Part Name & Description	Remarks
C3635	ECA0JM471	ELECTROLYTIC 6.3V 470UF	
C3636	ECA0JM471	ELECTROLYTIC 6.3V 470UF	
C3637	ECJ2VC1H151J	C CHIP 50V 150PF	
C3638	ECJ2VC1H151J	C CHIP 50V 150PF	
C4001	ECJ2VF1C224Z	C CHIP 16V 0.22UF	
C4002	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C4003	ECJ2VB1H272K	C CHIP 50V 2700PF	
C4004	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C4005	ECEA0JKA220	ELECTROLYTIC 6.3V 22UF	
C4006	ECJ2VB1H102K	C CHIP 50V 1000PF	
C4007	ECEA0JKA220	ELECTROLYTIC 6.3V 22UF	
C4008	ECEA0JKA470	ELECTROLYTIC 6.3V 47UF	
C4009	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4010	ECJ2VB1E273K	C CHIP 25V 0.027UF	
C4011	ECJ2VB1H822K	C CHIP 50V 8200PF	
C4012	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C4013	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C4014	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C4017	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C4102	ECQB1562JF	POLYESTER 100V 5600PF	
C4103	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C4104	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C4106	ECEA1CKA220	ELECTROLYTIC 16V 22UF	
C4201	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7UF	
C4202	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7UF	
C4203	ECEA0JKA330	ELECTROLYTIC 6.3V 33UF	
C4204	ECEA0JKA330	ELECTROLYTIC 6.3V 33UF	
C4205	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4206	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4207	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4208	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4209	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4210	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4211	ECJ2VB1H153K	C CHIP 50V 0.015UF	
C4212	ECJ2VB1H153K	C CHIP 50V 0.015UF	
C4213	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4214	ECEA1CKA101	ELECTROLYTIC 16V 100UF	
C4216	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4217	ECEA0JKA220	ELECTROLYTIC 6.3V 22UF	
C4218	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4219	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C4227	ECJ2VF1C224Z	C CHIP 16V 0.22UF	
C4229	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C4230	ECEA0JKA470	ELECTROLYTIC 6.3V 47UF	
C4239	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4240	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4241	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4242	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4317	ECEA1EKA100I	ELECTROLYTIC 25V 10UF	
C4318	ECEA1EKA100I	ELECTROLYTIC 25V 10UF	
C4319	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C4320	ECEA1EKA100I	ELECTROLYTIC 25V 10UF	
C4321	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C4322	ECEA1EKA100I	ELECTROLYTIC 25V 10UF	

Ref. No.	Part No.	Part Name & Description	Remarks
C4323	ECEA1EKA100I	ELECTROLYTIC 25V 10UF	
C4324	ECEA1EKA100I	ELECTROLYTIC 25V 10UF	
C4325	ECEA1EKA100I	ELECTROLYTIC 25V 10UF	
C4326	ECEA1EKA100I	ELECTROLYTIC 25V 10UF	
C4451	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C4452	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C4455	ECJ2VB1E104K	C CHIP 25V 0.1UF	
C4456	ECJ2VB1E104K	C CHIP 25V 0.1UF	
C4459	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C4801	ECJ2VB1C104K	C CHIP 16V 0.1UF	
C4802	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7UF	
C4803	ECJ2VC1H270J	C CHIP 50V 27PF	
C4901	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C4902	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2UF	
C4903	ECEA1HKA3R3	ELECTROLYTIC 50V 3.3UF	
C4904	ECEA1HKA3R3	ELECTROLYTIC 50V 3.3UF	
C4905	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4906	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C4911	ECJ2VB1E223K	C CHIP 25V 0.022UF	
C4912	ECJ2VB1E104K	C CHIP 25V 0.1UF	
C4913	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C4917	ECJ2VB1E104K	C CHIP 25V 0.1UF	
C4918	ECJ2VB1E104K	C CHIP 25V 0.1UF	
C4919	ECJ2VB1E104K	C CHIP 25V 0.1UF	
C4920	ECJ2VB1E223K	C CHIP 25V 0.022UF	
C6001	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C6003	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C6005	ECJ2VC1H100C	C CHIP 50V 10PF	
C6006	ECJ2VC1H090C	C CHIP 50V 9PF	
C6019	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C6021	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C6026	ECJ2VB1H102K	C CHIP 50V 1000PF	
C6027	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C6033	ECJ2VF1H104Z	C CHIP 50V 0.1UF	
C6201	ECJ2VB1H332K	C CHIP 50V 3300PF	
C6202	ECJ2VB1H102K	C CHIP 50V 1000PF	
C6203	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C6204	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C6217	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C6218	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C6221	ECEA0JKA220	ELECTROLYTIC 6.3V 22UF	
C6222	ECJ2VB1H272K	C CHIP 50V 2700PF	
C6223	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C6224	VCESAM0J331I	ELECTROLYTIC 6.3V 330UF	
C6228	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C6231	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C6232	ECA1HM470I	ELECTROLYTIC 50V 47UF	
C6233	ECEA1CKA470	ELECTROLYTIC 16V 47UF	
C7001	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C7010	ECJ2VB1H102K	C CHIP 50V 1000PF	

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L1001	ELF21V018A	LINE NOISE FILTER	⚠
L1001	LLN63055A	COIL	⚠
L1002	VLQSAB7D220K	COIL 22UH	
L1003	VLQSAB7D100K	COIL 10UH	
L1006	J0JHB0000021	FILTER	
L1501	J0JHB0000021	FILTER	
L1502	J0JHB0000021	FILTER	
L1503	VLQS0165	COIL 22UH	
L1504	VLQSAB7D100K	COIL 10UH	
L3001	ELESN470KA	COIL 47UH	
L3002	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
L3014	G0C330KA0045	COIL 33UH	
L3016	ELESN330KA	COIL 33UH	
L3018	ELESN470KA	COIL 47UH	
L3019	J0JBC0000019	FERRITE CORE	
L3101	ELESN101KA	COIL 100UH	
L3506	ELESN101KA	COIL 100UH	
L3507	ELESN101KA	COIL 100UH	
L3601	ELESN101KA	COIL 100UH	
L3602	ELESN101KA	COIL 100UH	
L3603	ELESN101KA	COIL 100UH	
L3605	ELESN101KA	COIL 100UH	
L3606	ELESN101KA	COIL 100UH	
L3607	ELESN101KA	COIL 100UH	
L3608	ELESN101KA	COIL 100UH	
L3609	ELESN101KA	COIL 100UH	
L3610	ERJ6GEYJ750V	MGF CHIP 1/10W 75	
L3611	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
L3612	ERJ6GEYJ750V	MGF CHIP 1/10W 75	
L3613	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
L3614	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
L3615	G0C1R0KA0045	COIL 1UH	
L3616	G0C1R0KA0045	COIL 1UH	
L4001	ELELN153KA	COIL 15MH	
L4101	ELESN471KA	COIL 470UH	
L4201	ELESN101KA	COIL 100UH	
L4303	ELESN101KA	COIL 100UH	
L4451	ELESN101KA	COIL 100UH	
L4801	ELESN220KA	COIL 22UH	
L4804	LSLF0035	EMI FILTER CHIP	
L6201	ELEXT101KE04	COIL 100UH	
L7002	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
L7003	G0C101KA0045	COIL 100UH	

CRYSTAL OSCILLATOR

Ref. No.	Part No.	Part Name & Description	Remarks
X3010	VSXS0195	CRYSTAL OSCILLATOR	
X6001	VSXS0232-TB	CRYSTAL OSCILLATOR	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P1501	VJSS0875	CONNECTOR RECEPTACLE 13P	
P1503	VEKS5801	CONNECTOR CABLE W/PLUG,DC12V	
P3001	VJSS0875	CONNECTOR RECEPTACLE 13P	
P3501	LSJWM9N050LL	CONNECTOR CABLE W/PLUG,DC 9V	
P3502	LSEK0407	SHIELD PLATE UNIT	
P3551	LSEK0453	GROUNDING WIRE	
P4001	VJSS0888	FE CONNECTOR 2P	
P4002	LSJWM6N130LL	CONNECTOR CABLE W/PLUG,DC 9V	
P6002	VJSS0875	CONNECTOR RECEPTACLE 13P	
P6201	K1KA12A00234	CONNECTOR 12P	

SWITCHES

Ref. No.	Part No.	Part Name & Description	Remarks
SW3001	VSSS0142	SWITCH SELECT SWITCH	
SW6001	LSSH0002	SWITCH LEAF SWITCH-SAFETY TAB	
SW6002	LSSS0012	SWITCH MODE SELECT	

FUSE & PROTECTOR

Ref. No.	Part No.	Part Name & Description	Remarks
F1001	K5D302AD0002	FUSE 125V 3A	⚠
F1001	K5D302AQ0003	FUSE 125V 3A	⚠
F1001	K5D302ADA002	FUSE 125V 3A	⚠
PR1001	UNH000600A	IC PROTECTOR 1.5A	⚠
PR1001	B1ZAZ0000040	IC PROTECTOR 1.5A	⚠
PR1001	LSSF009A25E	IC PROTECTOR 1.5A	⚠
PR1002	UNH000600A	IC PROTECTOR 1.5A	⚠
PR1002	B1ZAZ0000040	IC PROTECTOR 1.5A	⚠
PR1002	LSSF009A25E	IC PROTECTOR 1.5A	⚠
PR1080	LSSF009A10E	IC PROTECTOR 1.5A	⚠
PR1501	LSSF009A35E	IC PROTECTOR	⚠
PR1502	UNH000600A	IC PROTECTOR 1.5A	⚠
PR1502	B1ZAZ0000040	IC PROTECTOR 1.5A	⚠
PR1502	LSSF009A25E	IC PROTECTOR 1.5A	⚠

TRANSFORMER

Ref. No.	Part No.	Part Name & Description	Remarks
T1001	ETS28AD365NC	TRANSFORMER	⚠
T1501	LSTP0113	TRANSFORMER	⚠
T4101	LSLT0051	TRANSFORMER	

JACKS

Ref. No.	Part No.	Part Name & Description	Remarks
JK3001	K2HA608B0003	AUDIO/VIDEO JACK SOCKET	
JK3003	K1CB105B0035	S-VHS JACK SOCKET	
JK3004	K2HA507B0001	AUDIO/VIDEO JACK SOCKET	
JK4801	K7AAAB000009	IC, LINEAR	

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
741	LSJA0360	AC CORD W/PLUG,AC 120V	⚠
741	LSJA0358	AC CORD W/PLUG,AC 120V	⚠
741	LSJA0359	AC CORD W/PLUG,AC 120V	⚠
741	LSJA0361	AC CORD W/PLUG,AC 120V	⚠
741	LSJA0348	AC CORD W/PLUG,AC 120V	⚠
743	ENG56717G1	TUNER,UHF/VHF NR	
771	EYF52BC	FUSE HOLDER	

11.3.2. OPERATION C.B.A.

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC6301	PT6957E	IC, LOGIC	E.S.D.

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q6301	IMT17-T110	TRANSISTOR COMPLX CMP SI PNP CHIP	
Q6302	IMT17-T110	TRANSISTOR COMPLX CMP SI PNP CHIP	
Q6303	2SB0709A0L	TRANSISTOR SI PNP CHIP	
Q6303	B1ADCF000001	TRANSISTOR SI PNP CHIP	
Q6304	2SD0601A0L	TRANSISTOR SI NPN CHIP	
Q6304	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q6305	2SD0601A0L	TRANSISTOR SI NPN CHIP	
Q6305	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q6306	2SD0601A0L	TRANSISTOR SI NPN CHIP	
Q6306	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q6307	2SD0601A0L	TRANSISTOR SI NPN CHIP	
Q6307	B1ABCF000011	TRANSISTOR SI NPN CHIP	

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D6311	B3ABA0000400	LIGHT EMITTING DIODE GREEN	
D6311	SLP336C81HAB	LIGHT EMITTING DIODE GREEN	
D6312	B3AAA0000538	LIGHT EMITTING DIODE RED	
D6313	B3ABA0000400	LIGHT EMITTING DIODE GREEN	
D6313	SLP336C81HAB	LIGHT EMITTING DIODE GREEN	
D6314	B3AAA0000538	LIGHT EMITTING DIODE RED	
D7801	MAZ40510MF	DIODE ZENER 5.1V	
D7801	HZS5C2TD	DIODE ZENER 5.1V	
D7801	HZS5C3TD	DIODE ZENER 5.1V	
D7802	MAZ40510MF	DIODE ZENER 5.1V	
D7802	HZS5C2TD	DIODE ZENER 5.1V	
D7802	HZS5C3TD	DIODE ZENER 5.1V	

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R6310	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6311	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R6313	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6314	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R6315	ERJ6GEYJ123V	MGF CHIP 1/10W 12K	
R6316	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6317	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R6318	ERJ6GEYJ123V	MGF CHIP 1/10W 12K	
R6319	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6320	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R6321	ERJ6GEYJ123V	MGF CHIP 1/10W 12K	
R6322	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6323	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R6327	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6328	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6329	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6330	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6333	ERDS2TJ151T	CARBON 1/4W 150	
R6334	ERDS2TJ151T	CARBON 1/4W 150	
R6335	ERDS2TJ151T	CARBON 1/4W 150	
R6336	ERDS2TJ151T	CARBON 1/4W 150	
R6346	ERDS2TJ470	CARBON 1/4W 47	
R6370	ERJ6GEYJ121V	MGF CHIP 1/10W 120	
R6371	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6373	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R6374	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R6375	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R6376	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R6377	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R6378	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6379	ERDS2TJ102	CARBON 1/4W 1K	
R6380	ERDS2TJ102	CARBON 1/4W 1K	
R6381	ERDS2TJ102	CARBON 1/4W 1K	
R6382	ERDS2TJ102	CARBON 1/4W 1K	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C6306	ECEA0JKA331	ELECTROLYTIC 6.3V 330UF	
C6307	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C6308	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C6309	ECEA0JKA331	ELECTROLYTIC 6.3V 330UF	
C6320	VCESAM0J331I	ELECTROLYTIC 6.3V 330UF	
C6321	ECJ2VF1E104Z	C CHIP 25V 0.1UF	

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L6301	ELESN101KA	COIL 100UH	
L6302	ELESN470KA	COIL 47UH	
L6303	ERDS2TJ3R3	CARBON 1/4W 3.3	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P6301	LSJWM8N057AA	CONNECTOR CABLE W/PLUG,58V	
P6302	LSJWM8N057AA	CONNECTOR CABLE W/PLUG,58V	
P6303	LSJWMCN057AA	CONNECTOR CABLE W/PLUG,5V	

SWITCHES

Ref. No.	Part No.	Part Name & Description	Remarks
SW6302	EVQ11G05R	SWITCH PUSH	
SW6303	EVQ11G05R	SWITCH PUSH	
SW6304	EVQ11G05R	SWITCH PUSH	
SW6305	EVQ11G05R	SWITCH PUSH	
SW6306	EVQ11G05R	SWITCH PUSH	
SW6307	EVQ11G05R	SWITCH PUSH	
SW6308	EVQ11G05R	SWITCH PUSH	
SW6309	EVQ11G05R	SWITCH PUSH	
SW6310	EVQ11G05R	SWITCH PUSH	
SW6311	EVQ11G05R	SWITCH PUSH	
SW6312	EVQ11G05R	SWITCH PUSH	
SW6313	EVQ11G05R	SWITCH PUSH	
SW6314	EVQ11G05R	SWITCH PUSH	
SW6315	EVQ11G05R	SWITCH PUSH	
SW6316	EVQ11G05R	SWITCH PUSH	

JACKS

Ref. No.	Part No.	Part Name & Description	Remarks
JK7801	K2HA306A0018	FRONT AUDIO/VIDEO JACK SOCKET	

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
711	PNA4611M00HD	INFRARED RECEIVER UNIT	
716	LSSZ0005	LED DISPLAY PANEL	

11.3.3. DVD DECODER C.B.A.

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC8000	ES4318F	IC, 32BIT MICROCONTROLLER	E.S.D.
IC8001	AT24C04N10SI	IC, 4K EEP ROM	E.S.D.
IC8001	C3EBEC000031	IC, 4K EEP ROM	E.S.D.
IC8001	S-24C04A	IC, 4K EEP ROM	E.S.D.
IC8002	C0JBAF000480	IC, CMOS STANDARD LOGIC	E.S.D.
IC8002	SN74AHCT374N	IC, CMOS STANDARD LOGIC	E.S.D.
IC8003	C0DBZGG00002	IC, LINEAR	
IC8100	C3ABPG000078	IC, 64M SD RAM	E.S.D.
IC8100	C3ABPG000067	IC, 64M SD RAM	E.S.D.
IC8200	ADV7170KSU	IC, LINEAR	
IC8201	C0CBABD00016	IC, LINEAR	
IC8301	C3FBLD000084	IC, 8M FLASH MEMORY	E.S.D.
IC8301	C3FBLG000012	IC, 8M FLASH MEMORY	E.S.D.
IC8401	AN6552S-E1	IC, LINEAR	
IC8403	PCM1723E-2K	IC, LINEAR	
IC8502	C0JBAB000196	IC, CMOS STANDARD LOGIC	E.S.D.

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q8000	2SB09560RL	TRANSISTOR SI PNP CHIP	
Q8200	2SB1218ARL	TRANSISTOR SI PNP CHIP	
Q8201	2SB1218ARL	TRANSISTOR SI PNP CHIP	
Q8202	2SB1218ARL	TRANSISTOR SI PNP CHIP	
Q8204	2SB1218ARL	TRANSISTOR SI PNP CHIP	
Q8205	2SB1218ARL	TRANSISTOR SI PNP CHIP	
Q8206	2SB1218ARL	TRANSISTOR SI PNP CHIP	
Q8207	2SB1218ARL	TRANSISTOR SI PNP CHIP	
Q8208	2SB1218ARL	TRANSISTOR SI PNP CHIP	

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D8000	MAZ30510ML	DIODE ZENER 5.1V	
D8001	MAZ30510ML	DIODE ZENER 5.1V	
D8002	MAZ30510ML	DIODE ZENER 5.1V	
D8003	MAZ30510ML	DIODE ZENER 5.1V	

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R8003	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8010	ERJ3GEYJ472V	MGF CHIP 1/16W 4.7K	
R8011	ERJ3GEYJ472V	MGF CHIP 1/16W 4.7K	
R8012	ERJ3GEYJ472V	MGF CHIP 1/16W 4.7K	
R8013	ERJ3GEYJ472V	MGF CHIP 1/16W 4.7K	
R8014	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8015	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8016	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8017	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8018	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8019	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8020	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8021	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8022	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8023	ERJ3GEYJ470V	MGF CHIP 1/16W 47	
R8024	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8025	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8026	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8027	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8028	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8029	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8030	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8031	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8032	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8033	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8034	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8035	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8036	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8037	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8038	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8039	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8040	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8041	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8042	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8043	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8045	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8047	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8048	ERJ3GEYJ470V	MGF CHIP 1/16W 47	
R8049	ERJ1WYJ1R0U	MGF CHIP 1W 1	
R8050	ERJ3GEYJ820V	MGF CHIP 1/16W 82	
R8051	ERJ3GEYJ820V	MGF CHIP 1/16W 82	
R8052	ERJ3GEYJ820V	MGF CHIP 1/16W 82	
R8053	ERJ3GEYJ820V	MGF CHIP 1/16W 82	
R8054	ERJ3GEYJ820V	MGF CHIP 1/16W 82	
R8055	ERJ3GEYJ820V	MGF CHIP 1/16W 82	
R8056	ERJ3GEYJ820V	MGF CHIP 1/16W 82	
R8057	ERJ3GEYJ820V	MGF CHIP 1/16W 82	
R8058	ERJ3GEYJ470V	MGF CHIP 1/16W 47	
R8059	ERJ3GEYJ470V	MGF CHIP 1/16W 47	
R8060	ERJ3GEYJ470V	MGF CHIP 1/16W 47	
R8061	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R8062	ERJ3GEYJ470V	MGF CHIP 1/16W 47	
R8063	ERJ3GEYJ470V	MGF CHIP 1/16W 47	
R8064	ERJ3GEYJ472V	MGF CHIP 1/16W 4.7K	

Ref. No.	Part No.	Part Name & Description	Remarks
R8065	ERJ3GEYJ472V	MGF CHIP 1/16W 4.7K	
R8066	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R8067	ERJ3GEYJ470V	MGF CHIP 1/16W 47	
R8068	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8069	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8074	ERJ3GEYJ470V	MGF CHIP 1/16W 47	
R8076	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8077	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8082	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8083	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8084	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8085	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8086	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8087	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8088	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8089	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8090	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8091	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8092	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8093	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8094	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8095	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8096	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8097	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8098	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8099	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8101	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8102	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8103	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8104	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8105	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8106	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8107	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8108	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8109	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8110	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8111	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8113	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8115	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8116	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8117	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8118	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8119	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8120	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8123	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8124	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8125	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8137	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8143	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8144	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8145	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8146	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8147	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8148	ERJ3GEYJ100V	MGF CHIP 1/16W 10	

Ref. No.	Part No.	Part Name & Description	Remarks
R8149	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8150	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8151	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8152	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8153	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8154	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8155	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8156	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8157	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8158	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8202	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8203	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8204	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8205	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8206	ERJ3GEYJ104V	MGF CHIP 1/16W 100K	
R8207	ERJ3GEYJ104V	MGF CHIP 1/16W 100K	
R8208	ERJ3GEYJ152V	MGF CHIP 1/16W 1.5K	
R8215	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R8216	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R8217	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8218	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8220	ERJ3GEYJ151V	MGF CHIP 1/16W 150	
R8221	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8222	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8223	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8224	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8225	ERJ3GEYJ473V	MGF CHIP 1/16W 47K	
R8229	ERJ3GEYJ151V	MGF CHIP 1/16W 150	
R8230	ERJ3GEYJ302V	MGF CHIP 1/16W 3K	
R8231	ERJ3GEYJ151V	MGF CHIP 1/16W 150	
R8232	ERJ3GEYJ302V	MGF CHIP 1/16W 3K	
R8233	ERJ3GEYJ151V	MGF CHIP 1/16W 150	
R8234	ERJ3GEYJ302V	MGF CHIP 1/16W 3K	
R8238	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8239	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8240	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8241	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8242	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8243	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8245	ERJ3GEYJ302V	MGF CHIP 1/16W 3K	
R8246	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8292	ERJ8GEYJ1R0V	MGF CHIP 1/8W 1	
R8293	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8294	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8299	EVM3YSX50B23	VARIABLE 2K	
R8300	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8301	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8302	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8304	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8309	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8310	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8311	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8312	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8313	ERJ3GEYJ330V	MGF CHIP 1/16W 33	

Ref. No.	Part No.	Part Name & Description	Remarks
R8314	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8315	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8316	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8317	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8318	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8319	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8320	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8321	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8322	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8323	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8324	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8326	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8327	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8328	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8329	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8330	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8331	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8332	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8333	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8334	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8335	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8336	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8337	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8338	ERJ3GEYJ621V	MGF CHIP 1/16W 620	
R8339	ERJ3GEYJ333V	MGF CHIP 1/16W 33K	
R8340	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8341	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8342	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8343	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8344	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8345	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8346	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8347	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8348	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8349	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8350	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8351	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8352	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8353	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8354	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8355	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8356	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8357	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8358	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8359	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8360	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8361	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8362	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8363	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8364	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8365	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8366	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8367	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8368	ERJ3GEYJ220V	MGF CHIP 1/16W 22	

Ref. No.	Part No.	Part Name & Description	Remarks
R8369	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8370	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8371	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8372	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8373	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8374	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8375	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8376	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8377	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8378	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8379	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8380	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8381	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8382	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8383	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8384	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8385	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8386	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8387	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8388	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8389	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8390	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8391	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8392	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8393	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8394	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8395	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8396	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8397	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8398	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8403	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	
R8404	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	
R8405	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	
R8406	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	
R8407	ERJ3GEYJ822V	MGF CHIP 1/16W 8.2K	
R8408	ERJ3GEYJ822V	MGF CHIP 1/16W 8.2K	
R8409	ERJ3GEYJ622V	MGF CHIP 1/16W 6.2K	
R8410	ERJ3GEYJ622V	MGF CHIP 1/16W 6.2K	
R8411	ERJ3EKF1502V	MGF CHIP 1/16W 15K	
R8412	ERJ3EKF1502V	MGF CHIP 1/16W 15K	
R8413	ERJ3GEYJ471V	MGF CHIP 1/16W 470	
R8414	ERJ3GEYJ471V	MGF CHIP 1/16W 470	
R8427	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8429	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R8430	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R8431	ERJ3GEYJ473V	MGF CHIP 1/16W 47K	
R8432	ERJ3GEYJ473V	MGF CHIP 1/16W 47K	
R8433	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8434	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8435	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8447	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8500	ERJ3GEYJ473V	MGF CHIP 1/16W 47K	
R8501	ERJ3GEYJ331V	MGF CHIP 1/16W 330	
R8502	ERJ3GEYJ331V	MGF CHIP 1/16W 330	

Ref. No.	Part No.	Part Name & Description	Remarks
R8503	ERJ3GEYJ331V	MGF CHIP 1/16W 330	
R8504	ERJ3GEYJ331V	MGF CHIP 1/16W 330	
R8505	ERJ3GEYJ151V	MGF CHIP 1/16W 150	
R8506	ERJ3GEYJ473V	MGF CHIP 1/16W 47K	
R8507	ERJ3GEYJ473V	MGF CHIP 1/16W 47K	
R8508	ERJ3GEYJ473V	MGF CHIP 1/16W 47K	
R8509	ERJ3GEYJ473V	MGF CHIP 1/16W 47K	
R8510	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R8511	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R8512	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R8513	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R8514	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C8000	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8001	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8002	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8003	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8004	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8005	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8006	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8007	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8008	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8009	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8010	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8011	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8012	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8013	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8014	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8015	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8016	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8017	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8018	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8019	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8020	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8021	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8022	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8023	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8025	ECJ2VC1H151J	C CHIP 50V 150PF	
C8026	ECEV1CS100S	ELECTROLYTIC CHIP 16V 10UF	
C8027	ECEV0JA101S	ELECTROLYTIC CHIP 6.3V 100UF	
C8030	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8031	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8034	ECEV0JA331	ELECTROLYTIC CHIP 6.3V 330UF	
C8041	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8042	ECEV1AA470WR	ELECTROLYTIC CHIP 10V 47UF	
C8043	ECEV1AA101SP	ELECTROLYTIC CHIP 10V 100UF	
C8044	ECEV1AA101SP	ELECTROLYTIC CHIP 10V 100UF	
C8045	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8047	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8048	ECEV1CS100S	ELECTROLYTIC CHIP 16V 10UF	
C8049	ECEV1AA470WR	ELECTROLYTIC CHIP 10V 47UF	

Ref. No.	Part No.	Part Name & Description	Remarks
C8050	ECEV0JA101S	ELECTROLYTIC CHIP 6.3V 100UF	
C8054	ECEV1AA101SP	ELECTROLYTIC CHIP 10V 100UF	
C8056	ECEV0JA470S	ELECTROLYTIC CHIP 6.3V 47UF	
C8058	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8102	ECUE1C104ZFV	C CHIP 16V 0.1UF	
C8106	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8107	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8109	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8110	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8111	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8112	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8201	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8202	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8203	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8204	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8205	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8206	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8207	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8208	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8209	ECEV1CS100S	ELECTROLYTIC CHIP 16V 10UF	
C8210	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8211	ECEV0JA101S	ELECTROLYTIC CHIP 6.3V 100UF	
C8215	ECEV0JA470S	ELECTROLYTIC CHIP 6.3V 47UF	
C8219	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8220	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8221	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8222	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8223	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8224	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8225	ECEV1CS100S	ELECTROLYTIC CHIP 16V 10UF	
C8226	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8227	ECEV1AA470WR	ELECTROLYTIC CHIP 10V 47UF	
C8228	ECJ1VC1H390J	C CHIP 50V 39PF	
C8229	ECJ1VC1H390J	C CHIP 50V 39PF	
C8230	ECJ1VC1H220J	C CHIP 50V 22PF	
C8231	ECJ1VC1H390J	C CHIP 50V 39PF	
C8232	ECJ1VC1H390J	C CHIP 50V 39PF	
C8233	ECJ1VC1H220J	C CHIP 50V 22PF	
C8234	ECJ1VC1H390J	C CHIP 50V 39PF	
C8235	ECJ1VC1H390J	C CHIP 50V 39PF	
C8236	ECJ1VC1H220J	C CHIP 50V 22PF	
C8238	ECJ1VC1H220J	C CHIP 50V 22PF	
C8239	ECJ1VC1H220J	C CHIP 50V 22PF	
C8240	ECJ1VC1H220J	C CHIP 50V 22PF	
C8241	ECEV0JA470S	ELECTROLYTIC CHIP 6.3V 47UF	
C8243	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C8244	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C8245	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C8246	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C8247	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C8248	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C8249	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C8250	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C8251	ECUE1H103ZFV	C CHIP 50V 0.01UF	

Ref. No.	Part No.	Part Name & Description	Remarks
C8252	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C8253	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C8254	ECEV0JA470S	ELECTROLYTIC CHIP 6.3V 47UF	
C8255	ECJ1VC1H220J	C CHIP 50V 22PF	
C8256	ECJ1VC1H390J	C CHIP 50V 39PF	
C8257	ECJ1VC1H390J	C CHIP 50V 39PF	
C8258	ECJ1VC1H220J	C CHIP 50V 22PF	
C8301	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8302	ECJ1VF1A105Z	C CHIP 10V 1UF	
C8303	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8403	ECEV1CS100S	ELECTROLYTIC CHIP 16V 10UF	
C8404	ECEV1CA101	ELECTROLYTIC CHIP 16V 100UF	
C8405	ECEV1CS100S	ELECTROLYTIC CHIP 16V 10UF	
C8406	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8407	ECEV1EA330SP	ELECTROLYTIC CHIP 25V 33UF	
C8408	ECEV1EA330SP	ELECTROLYTIC CHIP 25V 33UF	
C8409	ECJ1VC1H101J	C CHIP 50V 100PF	
C8410	ECJ1VC1H101J	C CHIP 50V 100PF	
C8411	ECJ1VB1H102K	C CHIP 50V 1000PF	
C8412	ECJ1VB1H102K	C CHIP 50V 1000PF	
C8414	ECJ1VB1H472K	C CHIP 50V 4700PF	
C8416	ECJ1VB1H472K	C CHIP 50V 4700PF	
C8421	ECJ1VC1H330J	C CHIP 50V 33PF	
C8425	ECEV1CA100S	ELECTROLYTIC CHIP 16V 10UF	
C8426	ECEV1CA100S	ELECTROLYTIC CHIP 16V 10UF	
C8429	ECEV1CS100S	ELECTROLYTIC CHIP 16V 10UF	
C8430	ECEV1CS100S	ELECTROLYTIC CHIP 16V 10UF	
C8431	ECEV1CS100S	ELECTROLYTIC CHIP 16V 10UF	
C8432	ECEV1CS100S	ELECTROLYTIC CHIP 16V 10UF	
C8438	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8439	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8440	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8442	ECEV1AA470WR	ELECTROLYTIC CHIP 10V 47UF	
C8443	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8507	ECJ1VC1H330J	C CHIP 50V 33PF	
C8508	ECJ1VC1H330J	C CHIP 50V 33PF	
C8509	ECJ1VC1H330J	C CHIP 50V 33PF	
C8510	ECJ1VC1H330J	C CHIP 50V 33PF	
C8511	ECJ1VC1H330J	C CHIP 50V 33PF	
C8513	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8514	ECJ1VF1C104Z	C CHIP 16V 0.1UF	

FILTERS

Ref. No.	Part No.	Part Name & Description	Remarks
FL8000	LSLF0014	EMI FILTER CHIP	
FL8001	LSLF0014	EMI FILTER CHIP	
FL8002	LSLF0014	EMI FILTER CHIP	
FL8003	LSLF0014	EMI FILTER CHIP	
FL8200	LSLF0014	EMI FILTER CHIP	

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L8000	J0JHC0000027	EMI FILTER CHIP	
L8002	J0JBC0000010	CHIP EMI FILTER	
L8003	J0JBC0000010	CHIP EMI FILTER	
L8004	J0JBC0000010	CHIP EMI FILTER	
L8005	J0JBC0000010	CHIP EMI FILTER	
L8006	J0JBC0000010	CHIP EMI FILTER	
L8007	J0JBC0000010	CHIP EMI FILTER	
L8009	LSLF0008	LOW PASS FILTER	
L8010	LSLF0008	LOW PASS FILTER	
L8011	J0JGC0000017	EMI FILTER CHIP	
L8012	J0JGC0000017	EMI FILTER CHIP	
L8013	J0JGC0000017	EMI FILTER CHIP	
L8017	LSLF0006	LOW PASS FILTER	
L8018	J0JBC0000010	CHIP EMI FILTER	
L8020	J0JBC0000010	CHIP EMI FILTER	
L8021	J0JCC0000117	EMI FILTER CHIP	
L8022	J0JHC0000027	EMI FILTER CHIP	
L8023	LSLF0015	EMI FILTER CHIP	
L8102	LSLF0015	EMI FILTER CHIP	
L8200	LSLF0015	EMI FILTER CHIP	
L8203	J0JBC0000010	CHIP EMI FILTER	
L8204	J0JBC0000010	CHIP EMI FILTER	
L8205	J0JBC0000010	CHIP EMI FILTER	
L8206	J0JBC0000010	CHIP EMI FILTER	
L8207	J0JHC0000027	EMI FILTER CHIP	
L8210	LSLF0006	LOW PASS FILTER	
L8212	G1C270MA0021	INDUCTOR CHIP	
L8213	G1C330MA0021	INDUCTOR CHIP	
L8214	G1C270MA0021	INDUCTOR CHIP	
L8215	G1C270MA0021	INDUCTOR CHIP	
L8216	G1C330MA0021	INDUCTOR CHIP	
L8217	G1C270MA0021	INDUCTOR CHIP	
L8218	G1C270MA0021	INDUCTOR CHIP	
L8219	G1C330MA0021	INDUCTOR CHIP	
L8220	G1C270MA0021	INDUCTOR CHIP	
L8222	LSLF0015	EMI FILTER CHIP	
L8223	LSLF0015	EMI FILTER CHIP	
L8228	G1C270MA0021	INDUCTOR CHIP	
L8229	G1C330MA0021	INDUCTOR CHIP	
L8230	G1C270MA0021	INDUCTOR CHIP	
L8301	LSLF0006	LOW PASS FILTER	
L8400	J0JBC0000010	CHIP EMI FILTER	
L8401	J0JBC0000010	CHIP EMI FILTER	
L8402	LSLF0032	CHIP EMI FILTER	
L8410	J0JBC0000010	CHIP EMI FILTER	
L8411	J0JBC0000010	CHIP EMI FILTER	
L8416	LSLF0006	LOW PASS FILTER	
L8501	LSLF0006	LOW PASS FILTER	
L8506	G1C1R0K00005	INDUCTOR CHIP	
L8507	G1C1R0K00005	INDUCTOR CHIP	
L8508	G1C1R0K00005	INDUCTOR CHIP	
L8511	LSLF0015	EMI FILTER CHIP	
L8512	G1C1R0K00005	INDUCTOR CHIP	
L8513	G1C1R0K00005	INDUCTOR CHIP	

CRYSTAL OSCILLATOR

Ref. No.	Part No.	Part Name & Description	Remarks
X8501	VSXS0240	CRYSTAL OSCILLATOR	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P8001	VJPS0771	CONNECTOR PLUG 13P	
P8002	VJPS0771	CONNECTOR PLUG 13P	
P8003	VJPS0771	CONNECTOR PLUG 13P	
P8004	LSJS0040	CONNECTOR 40P	

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
737	VEKS5836	GROUNDING WIRE	
791	VEKS5773	CONNECTOR CABLE W/PLUG,DC 5V	

12. SCHEMATIC DIAGRAMS FOR PRINTING WITH LETTER SIZE

MAIN I (SYSTEM CONTROL/ SERVO) SCHEMATIC DIAGRAM

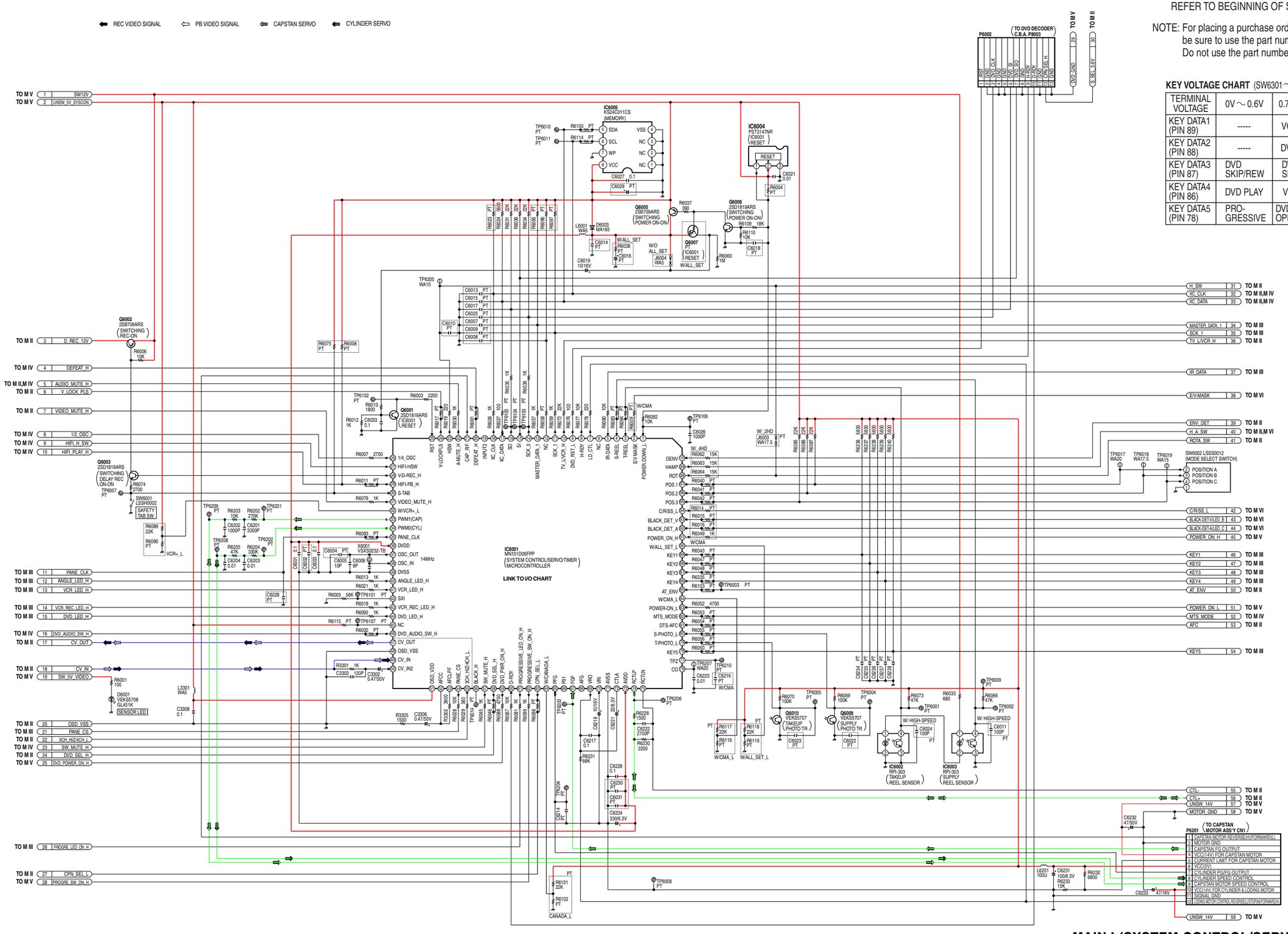
NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts, be sure to use the part number listed in the parts list. Do not use the part number on this diagram.

KEY VOLTAGE CHART (SW6301～6304, 6311～6319)

TERMINAL VOLTAGE	0V～0.6V	0.7V～1.9V	2.0V～3.1V	3.2V～4.4V
KEY DATA1 (PIN 89)	-----	VCR PLAY	VCR REW	-----
KEY DATA2 (PIN 88)	-----	DVD STOP	VCR STOP/EJECT	VCR FF
KEY DATA3 (PIN 87)	DVD SKIP/REW	DVD SKIP/FWD	POWER	CH DOWN
KEY DATA4 (PIN 86)	DVD PLAY	VCR REC	VCR/TV	CH UP
KEY DATA5 (PIN 78)	PRO-GRESSIVE	DVD OPEN/CLOSE	DVD PAUSE	-----



NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

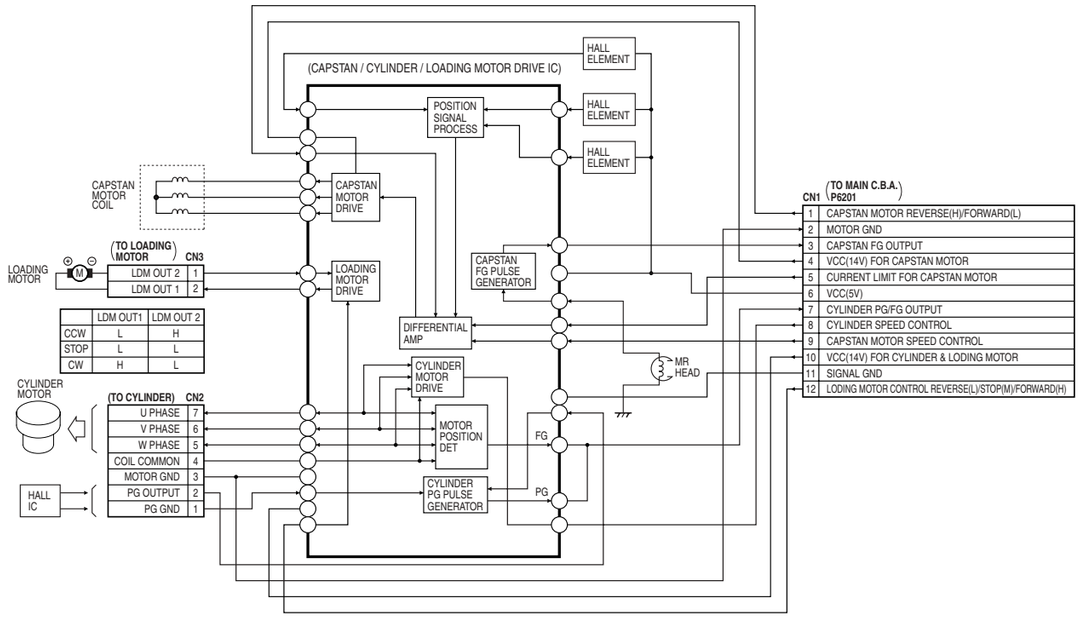
I/O CHART OF IC6001

Pin No.	I/O	Signal Name	Description
1	I	POWER_DOWN_L	POWER DOWN(L)
2	I	E/V-MASK	E/V-MASK
3	I	T-REEL	TAKEUP REEL PULSE
4	I	S-REEL	SUPPLY REEL PULSE
5	I	IR-DATA	IR-DATA
6	-	NC	(Not used)
7	O	LD_CTL	LOADING MOTOR CONTROL REVERSE(L)/STOP(M)/FORWARD(H)
8	O	H-RDY	HOST READY(H)
9	O	DVD_RST_L	DVD RESET(L)
10	O	TV_L/VCR_H	TV(L)/VCR(H)
11	O	SCK_1	SERIAL CLOCK 1
12	-	NC	(Not used)
13	O	MASTER_DATA_1	SERIAL DATA 0
14	I	SCK_0	DVD SERIAL CLOCK
15	I	SI	DVD SERIAL DATA 1
16	O	SO	DVD SERIAL DATA 0
17	I/O	IIC_DATA	I2C SERIAL DATA
18	O	IIC_CLK	I2C SERIAL CLOCK
19	O	INPUT2	INPUT SELECT 2
20	O	DEFEAT_H	AUDIO DEFEAT(H)
21	O	CAP_R/F	CAPSTAN MOTOR REVERSE(H)/FORWARD(L)
22	O	A-MUTE_H	AUDIO MUTE(H)
23	O	HSW	HEAD SW
24	O	V-LOCKPLS	V-LOCK PULSE
25	I	RST	RESET
26	O	1/4_OSC	3.58MHz
27	O	HIFI-HSW	Hi-Fi HEAD SW
28	O	V-D-REC_H	VIDEO DELAY REC(H)
29	I	HIFI-PB_H	Hi-Fi PB(H)
30	I	S-TAB	SAFETY TAB BROKEN(H)
31	O	VIDEO_MUTE_H	VIDEO MUTE(H)
32	I	W/VCR+_L	VCR+(L)
33	O	PWM1(CAP)	CAP ERROR
34	O	PWM0(CYL)	CYL ERROR
35	O	PANE_CLK	PANEL CLOCK
36	I	DVDD	VDD
37	O	OSC_OUT	OSC 2
38	I	OSC_IN	OSC 1
39	-	DVSS	GND
40	O	ANGLE_LED_H	ANGLE LED ON(H)
41	O	VCR_LED_H	VCR LED ON(H)
42	-	SXI	SXI
43	O	VCR_REC_LED_H	VCR REC LED ON(H)
44	O	DVD_LED_H	DVD LED ON(H)
45	-	NC	(Not used)
46	O	DVD_AUDIO_SW_H	DVD AUDIO CONTROL ON(H)
47	O	CV_OUT	VIDEO
48	-	OSD_VSS	GND
49	I	CV_IN	VIDEO
50	I	CV_IN2	V-SYNC

Pin No.	I/O	Signal Name	Description
51	I	OSD_VDD	VDD
52	O	AFCC	AFC
53	I	AFCLPF	AFC
54	O	PANE_CS	PANEL CS(L)
55	O	3CH_HIZ/4CH_L	CH3(H)/CH4(L)
56	O	BLACK_H	BLACK DETECT(H)
57	O	SW_MUTE_H	SW MUTE(H)
58	O	DVD_SEL_H	DVD SELECT(H)
59	O	DVD_PWR_ON_H	DVD POWER ON(H)
60	I	D-RDY	DVD READY(H)
61	O	PROGRESSIVE_LED_ON_H	PROGRESSIVE LED ON(H)
62	O	PROGRESSIVE_SW_ON_H	PROGRESSIVE ON(H)
63	I	CPN_SEL_L	COMPONENT SELECT(L)
64	O	W/CANADA_L	(Not used)
65	I	PFG	CYL PG/FG
66	-	NC	(Not used)
67	I	FGF	CAP FG
68	-	AFG	CAP FG
69	O	VRO	V-REF 1
70	-	VRI	V-REF 2
71	-	AVSS	GND
72	-	CTLA	CTL AMP
73	I	AVDD	VDD
74	I/O	RCTLP	CTL PULSE(+)
75	-	RCTLN	CTL PULSE(-)
76	-	CO	PB CONTROL PULSE
77	-	NC	(Not used)
78	I	KEY5	KEY DATA 5
79	I	T-PHOTO_L	TAKEUP PHOTO TR(L)
80	I	S-PHOTO_L	SUPPLY PHOTO TR(L)
81	I	DTS-AFC	AFC
82	I	MTS_MODE	MTS MODE
83	O	POWER-ON_L	POWER ON(L)
84	I	W/CMA_L	CM ADVANCE(L)
85	I	AT_ENV	ENV-VOLTAGE
86	I	KEY4	KEY DATA 4
87	I	KEY3	KEY DATA 3
88	I	KEY2	KEY DATA 2
89	I	KEY1	KEY DATA 1
90	-	W/ALL_SET_L	(Not used)
91	O	POWER_ON_H	POWER ON(H)
92	I	BLACK_DET_A	AUDIO BLACK DETECT(L)
93	I	BLACK_DET_V	VIDEO BLACK DETECT(L)
94	O	C/R/SS-L	CUE/REV/SS(L)
95	I	POS.3	MODE SW POSITION C
96	I	POS.2	MODE SW POSITION B
97	I	POS.1	MODE SW POSITION A
98	O	ROT	ROTARY SW
99	O	HAMP	HEAD AMP SW
100	I	DENV	ENVELOPE DET

CAPSTAN MOTOR ASS'Y

NOTE:
CAPSTAN MOTOR ASS'Y (REF. NO. 46) IS SUPPLIED AS A UNIT ONLY.
HOWEVER, THE FLAT FLEXIBLE CABLE (REF. NO. 48) IS AVAILABLE SEPARATELY AS A REPLACEMENT PART.



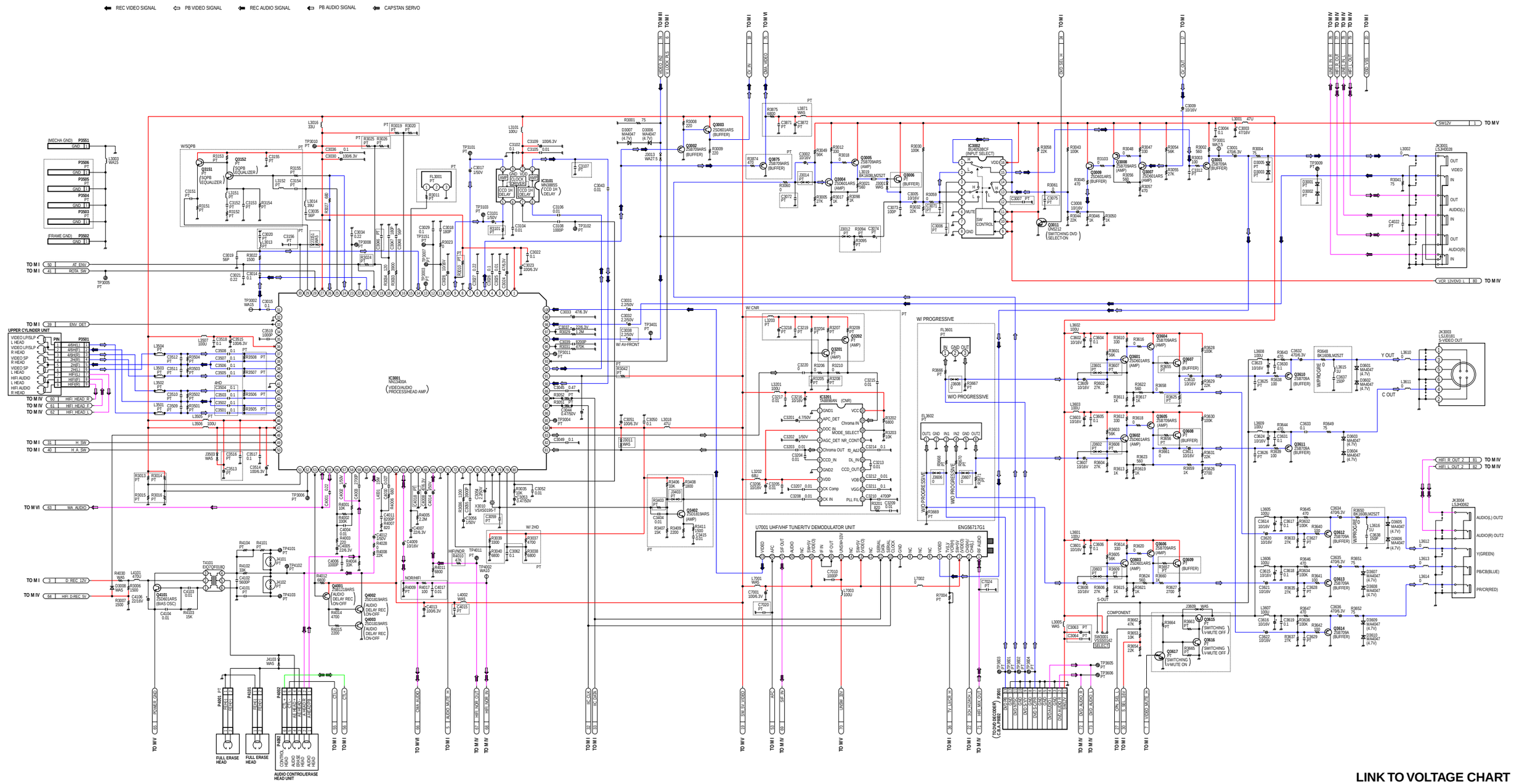
	LDM OUT1	LDM OUT 2
CCW	L	H
STOP	L	L
CW	H	L

MAIN II (SIGNAL PROCESS/AUDIO) SCHEMATIC DIAGRAM

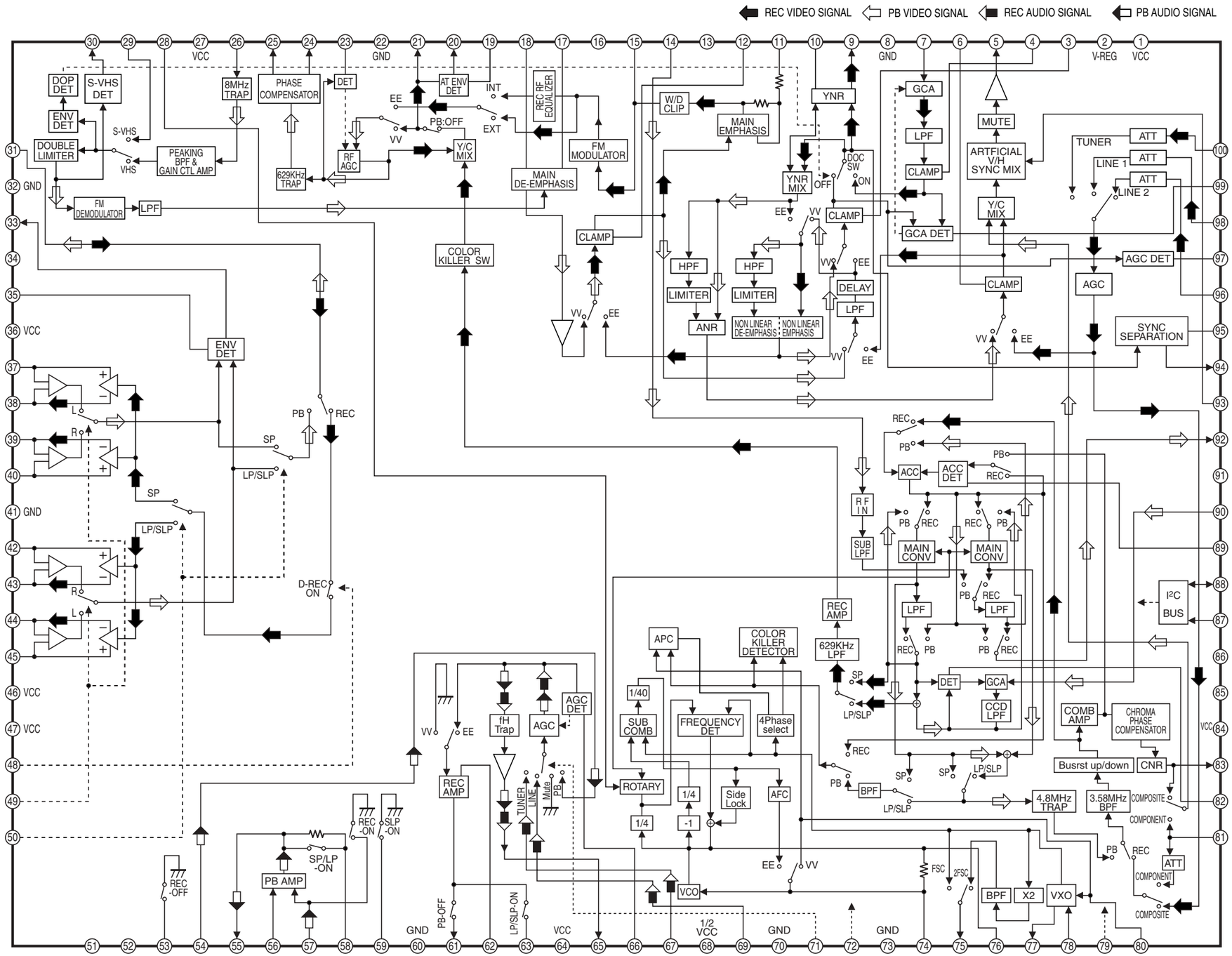
NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts, be sure to use the part number listed in the parts list. Do not use the part number on this diagram.



IC3001 VIDEO/AUDIO SIGNAL PROCESS / HEAD AMP IC- DETAIL BLOCK DIAGRAM



PV-D4742

IC3001 DETAIL BLOCK DIAGRAM

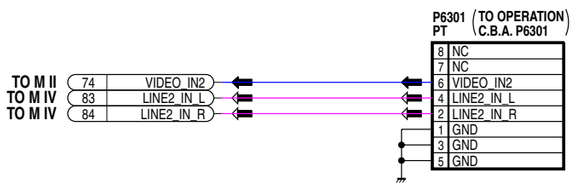
MAIN III (DIGITAL AUDIO OUT) SCHEMATIC DIAGRAM

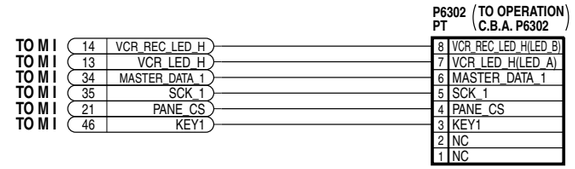
NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

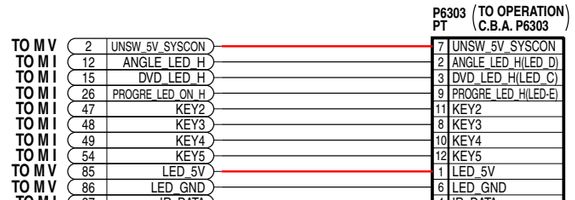
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

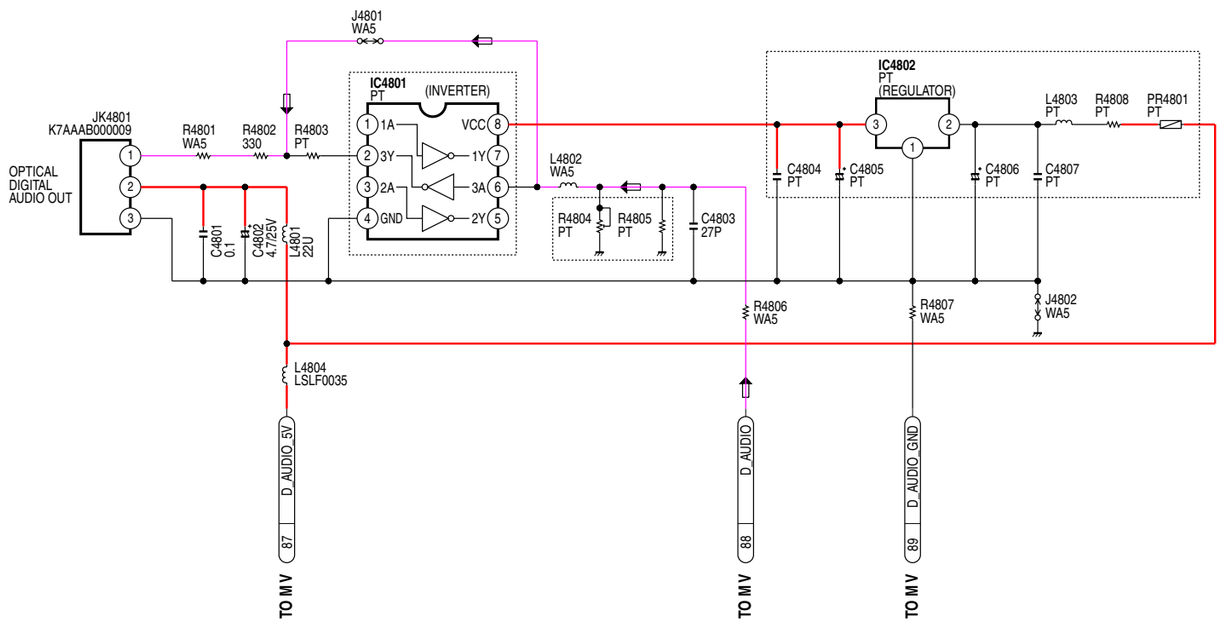
NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

⬅ REC VIDEO SIGNAL ⬅ REC AUDIO SIGNAL ⇦ DIGITAL AUDIO SIGNAL









LINK TO VOLTAGE CHART

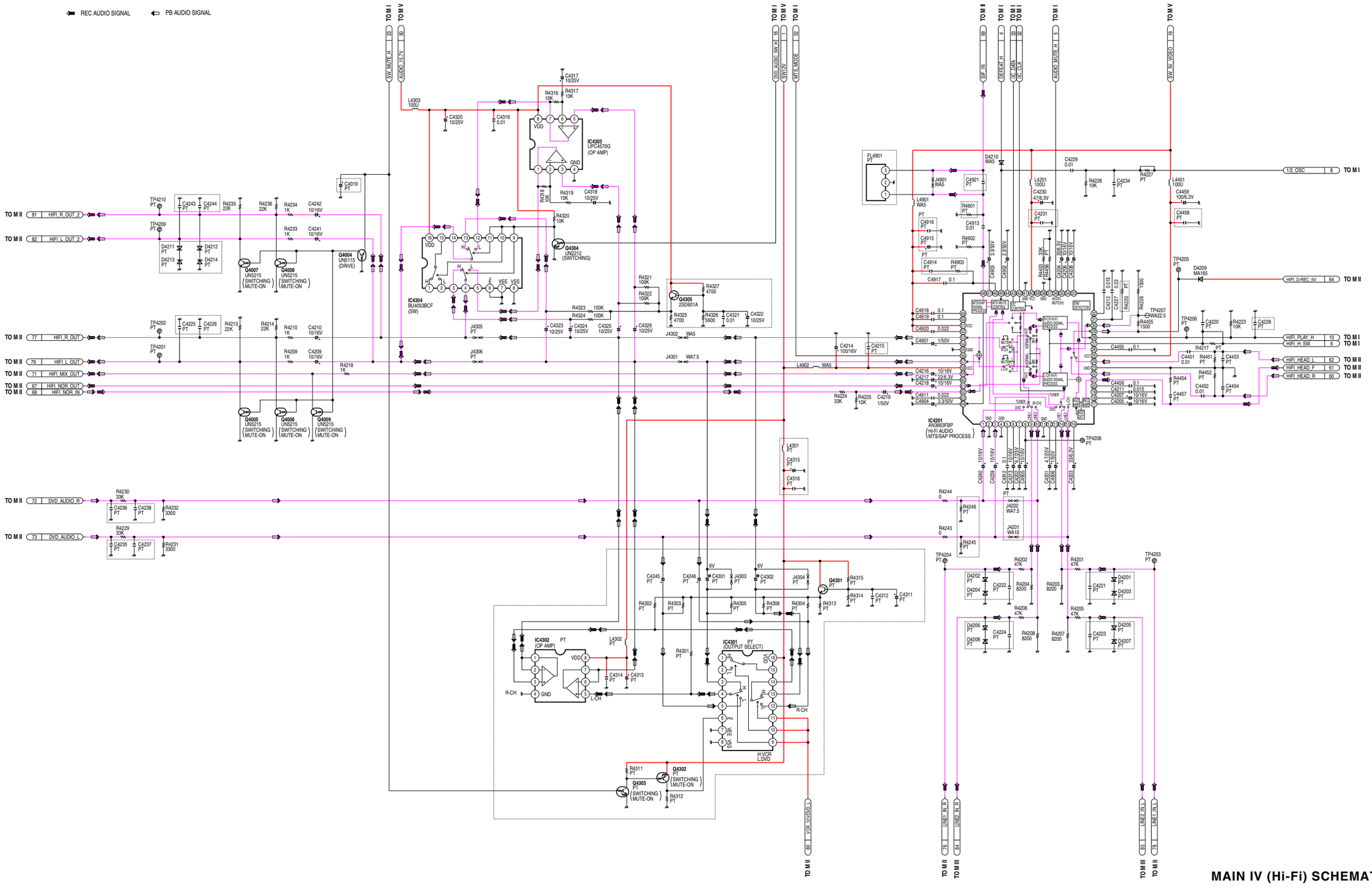
LSJB2015
PV-D4742
MAIN III (DIGITAL AUDIO OUT) SCHEMATIC DIAGRAM

MAIN IV (Hi-Fi) SCHEMATIC DIAGRAM

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts, be sure to use the part number listed in the parts list. Do not use the part number on this diagram.


REC AUDIO SIGNAL
PB AUDIO SIGNAL
IC4303 UPC4570G (OP AMP)
IC4304 BU4053BCF (SW)
IC4201 AN3993FBP (Hi-Fi AUDIO \MTS/SAP PROCESS)
IC4302 PT (OP AMP)
IC4301 PT (OUTPUT SELECT)
Q4004 UN5115 (DRIVE)
Q4007 UN5215 (SWITCHING \MUTE-ON)
Q4008 UN5215 (SWITCHING \MUTE-ON)
Q4005 UN5215 (SWITCHING \MUTE-ON)
Q4006 UN5215 (SWITCHING \MUTE-ON)
Q4009 UN5215 (SWITCHING \MUTE-ON)
Q4304 UN5212 (SWITCHING)
Q4305 2SD601A
Q4301 PT
Q4302 PT (SWITCHING \MUTE-ON)
Q4303 PT (SWITCHING \MUTE-ON)
TO M II 81 HIFI_R_OUT_2
TO M II 82 HIFI_L_OUT_2
TO M II 77 HIFI_R_OUT
TO M II 79 HIFI_L_OUT
TO M II 71 HIFI_MIX_OUT
TO M II 67 HIFI_NOR_OUT
TO M II 68 HIFI_NOR_IN
TO M II 72 DVD_AUDIO_R
TO M II 73 DVD_AUDIO_L
TO M I 23 SW_MUTE_H
TO M V 90 AUDIO 15.7V
TO M I 16 DVD_AUDIO_SW_H
TO M V 1 SW15V
TO M I 18 MTS MODE
TO M II 60 VCR_R/VDVD_L
TO M II 75 LINE1_IN_R
TO M III 84 LINE2_IN_R
TO M III 83 LINE2_IN_L
TO M II 74 LINE1_IN_L
TO M II 68 SIF_IN
TO M I 4 SEPEAR_H
TO M I 3 I2C_DATA
TO M I 2 I2C_CLK
TO M I 5 AUDIO MUTE_H
TO M V 19 SW_5V_VIDEO
TO M II 8 1/2_OSC
TO M II 64 HIFI_D-REC_5V
TO M I 10 HIFI_PLAY_H
TO M I 9 HIFI_H_SW
TO M II 62 HIFI_HEAD_L
TO M II 61 HIFI_HEAD_F
TO M II 60 HIFI_HEAD_R
TO M II 63 HIFI_MIX_OUT
TO M II 62 HIFI_NOR_OUT
TO M II 61 HIFI_NOR_IN
TO M II 59 DVD_AUDIO_R
TO M II 58 DVD_AUDIO_L
TO M II 57 DVD_AUDIO_SW_H
TO M II 56 DVD_AUDIO_SW_L
TO M II 55 DVD_AUDIO_C
TO M II 54 DVD_AUDIO_SW_C
TO M II 53 DVD_AUDIO_SW_R
TO M II 52 DVD_AUDIO_SW_R
TO M II 51 DVD_AUDIO_SW_L
TO M II 50 DVD_AUDIO_SW_L
TO M II 49 DVD_AUDIO_SW_L
TO M II 48 DVD_AUDIO_SW_L
TO M II 47 DVD_AUDIO_SW_L
TO M II 46 DVD_AUDIO_SW_L
TO M II 45 DVD_AUDIO_SW_L
TO M II 44 DVD_AUDIO_SW_L
TO M II 43 DVD_AUDIO_SW_L
TO M II 42 DVD_AUDIO_SW_L
TO M II 41 DVD_AUDIO_SW_L
TO M II 40 DVD_AUDIO_SW_L
TO M II 39 DVD_AUDIO_SW_L
TO M II 38 DVD_AUDIO_SW_L
TO M II 37 DVD_AUDIO_SW_L
TO M II 36 DVD_AUDIO_SW_L
TO M II 35 DVD_AUDIO_SW_L
TO M II 34 DVD_AUDIO_SW_L
TO M II 33 DVD_AUDIO_SW_L
TO M II 32 DVD_AUDIO_SW_L
TO M II 31 DVD_AUDIO_SW_L
TO M II 30 DVD_AUDIO_SW_L
TO M II 29 DVD_AUDIO_SW_L
TO M II 28 DVD_AUDIO_SW_L
TO M II 27 DVD_AUDIO_SW_L
TO M II 26 DVD_AUDIO_SW_L
TO M II 25 DVD_AUDIO_SW_L
TO M II 24 DVD_AUDIO_SW_L
TO M II 23 DVD_AUDIO_SW_L
TO M II 22 DVD_AUDIO_SW_L
TO M II 21 DVD_AUDIO_SW_L
TO M II 20 DVD_AUDIO_SW_L
TO M II 19 DVD_AUDIO_SW_L
TO M II 18 DVD_AUDIO_SW_L
TO M II 17 DVD_AUDIO_SW_L
TO M II 16 DVD_AUDIO_SW_L
TO M II 15 DVD_AUDIO_SW_L
TO M II 14 DVD_AUDIO_SW_L
TO M II 13 DVD_AUDIO_SW_L
TO M II 12 DVD_AUDIO_SW_L
TO M II 11 DVD_AUDIO_SW_L
TO M II 10 DVD_AUDIO_SW_L
TO M II 9 DVD_AUDIO_SW_L
TO M II 8 DVD_AUDIO_SW_L
TO M II 7 DVD_AUDIO_SW_L
TO M II 6 DVD_AUDIO_SW_L
TO M II 5 DVD_AUDIO_SW_L
TO M II 4 DVD_AUDIO_SW_L
TO M II 3 DVD_AUDIO_SW_L
TO M II 2 DVD_AUDIO_SW_L
TO M II 1 DVD_AUDIO_SW_L

LSJB2015
PV-D4742
MAIN IV (Hi-Fi) SCHEMATIC DIAGRAM

MAIN V (POWER SUPPLY) SCHEMATIC DIAGRAM

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE 3A 125V/250V FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES
D' INCENDIE N' UTILISERQUE DES FUSIBLE DE MÉME
TYPE 3A 125V/250V

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

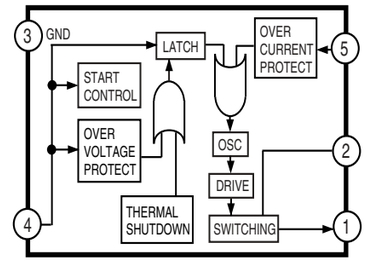
HOT CIRCUIT. BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.

HOT

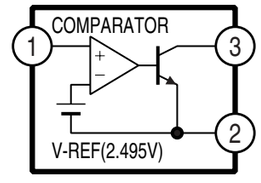
NOTE: THE VOLTAGE FOR PARTS IN HOT CIRCUIT
IS MEASURED USING TP1001
AS A COMMON TERMINAL.

DIGITAL AUDIO SIGNAL

IC1501 SWITCHING CONTROL IC- DETAIL BLOCK DIAGRAM



IC1002, 1503 SHUNT REGULATOR IC- DETAIL BLOCK DIAGRAM



LINK TO VOLTAGE CHART

LSJB2015

PV-D4742

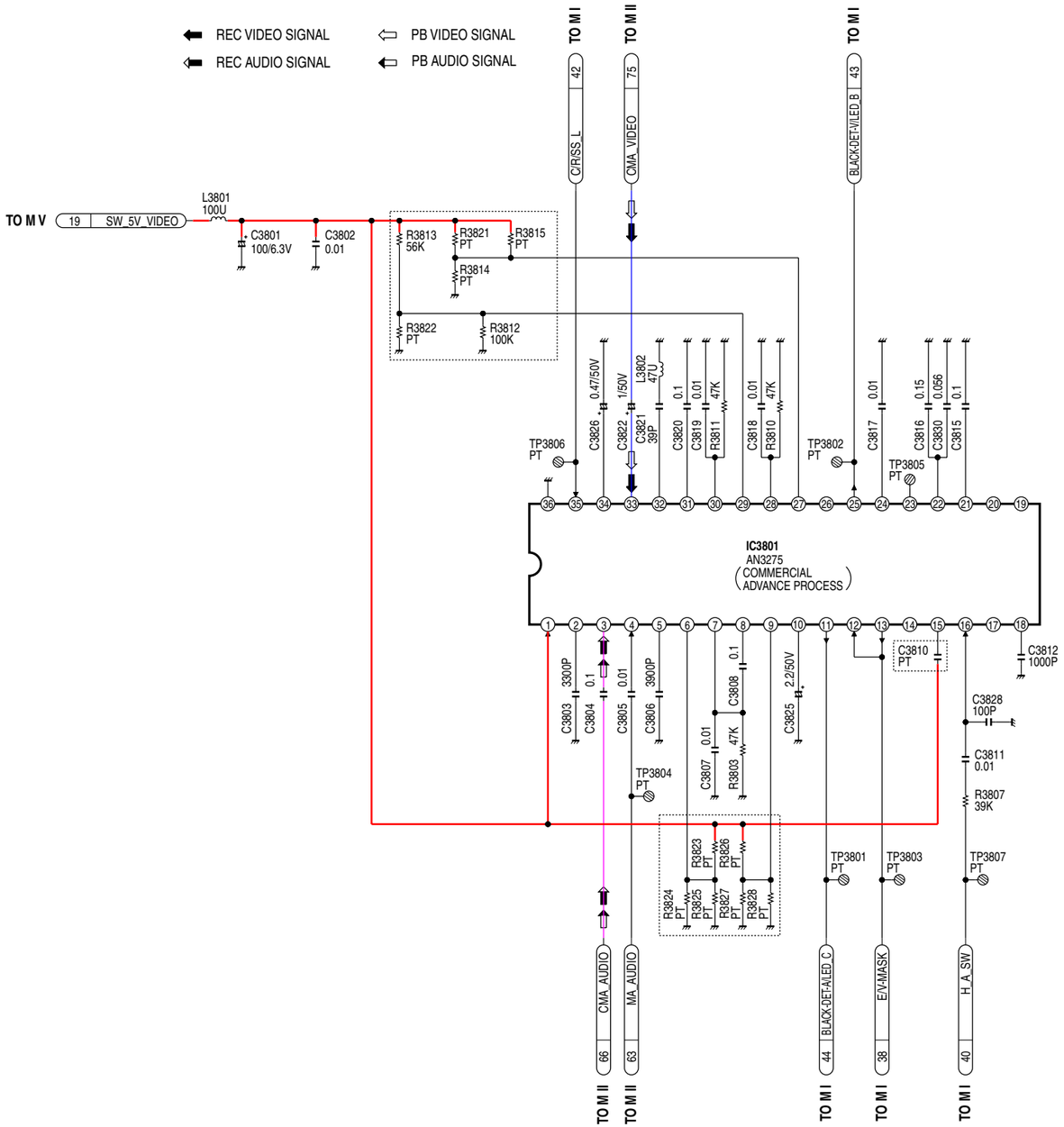
MAIN V (POWER SUPPLY) SCHEMATIC DIAGRAM

MAIN VI (ADVANCE) SCHEMATIC DIAGRAM (PT)

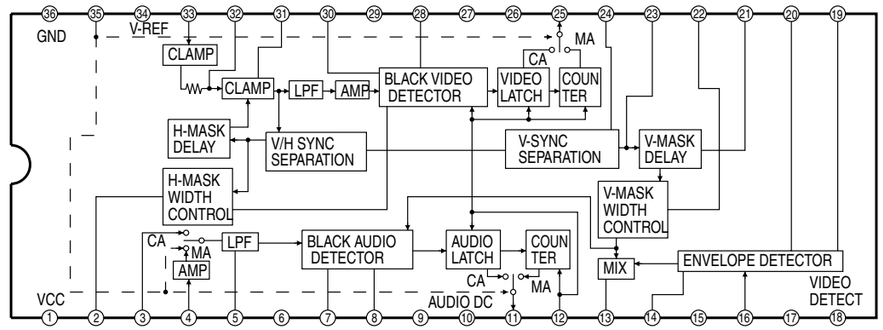
NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.



IC3801 COMMERCIAL ADVANCE PROCESS IC- DETAIL BLOCK DIAGRAM

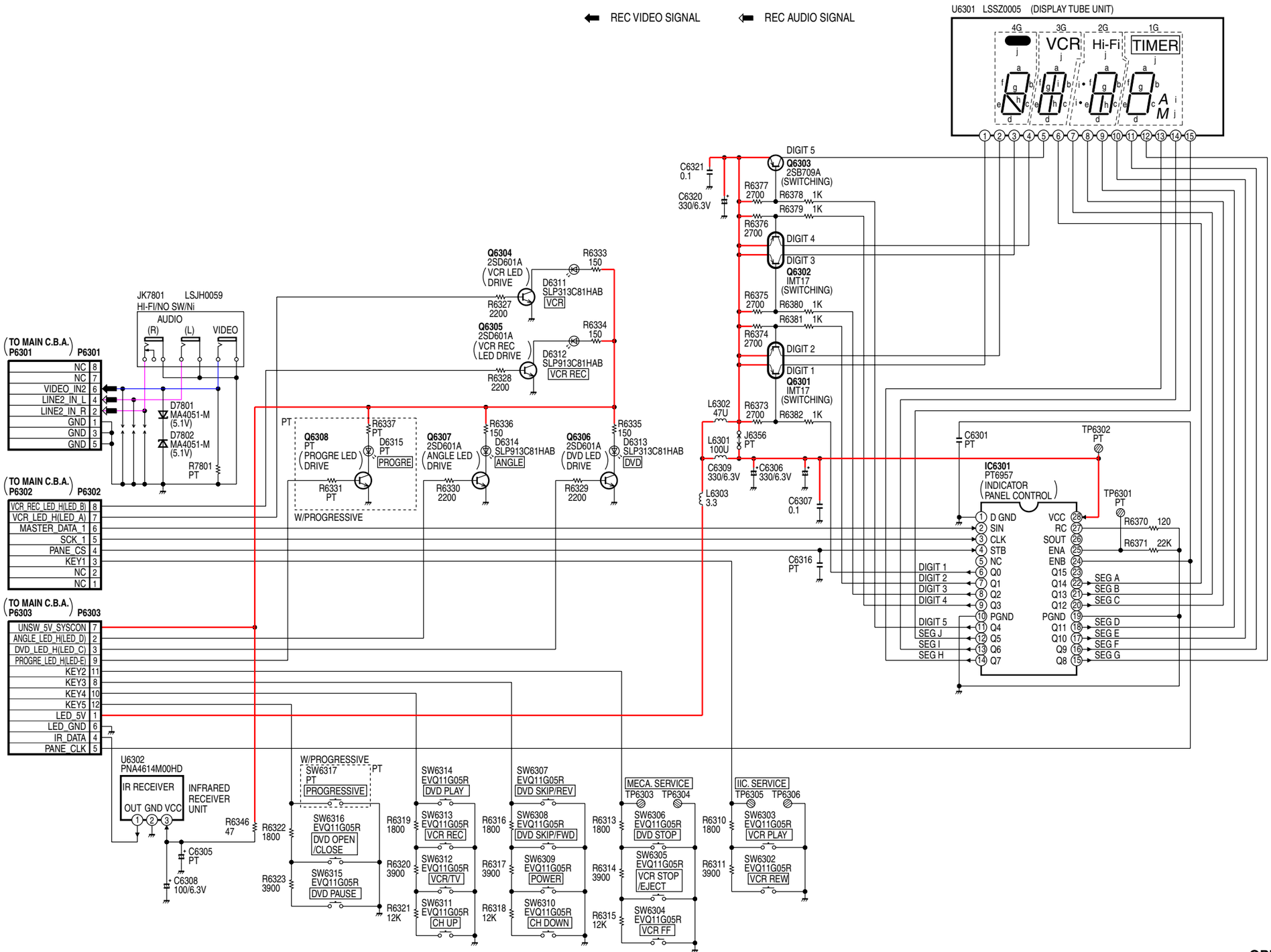


OPERATION SCHEMATIC DIAGRAM

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts, be sure to use the part number listed in the parts list. Do not use the part number on this diagram.



LINK TO VOLTAGE CHART

LSJB2016

PV-D4742

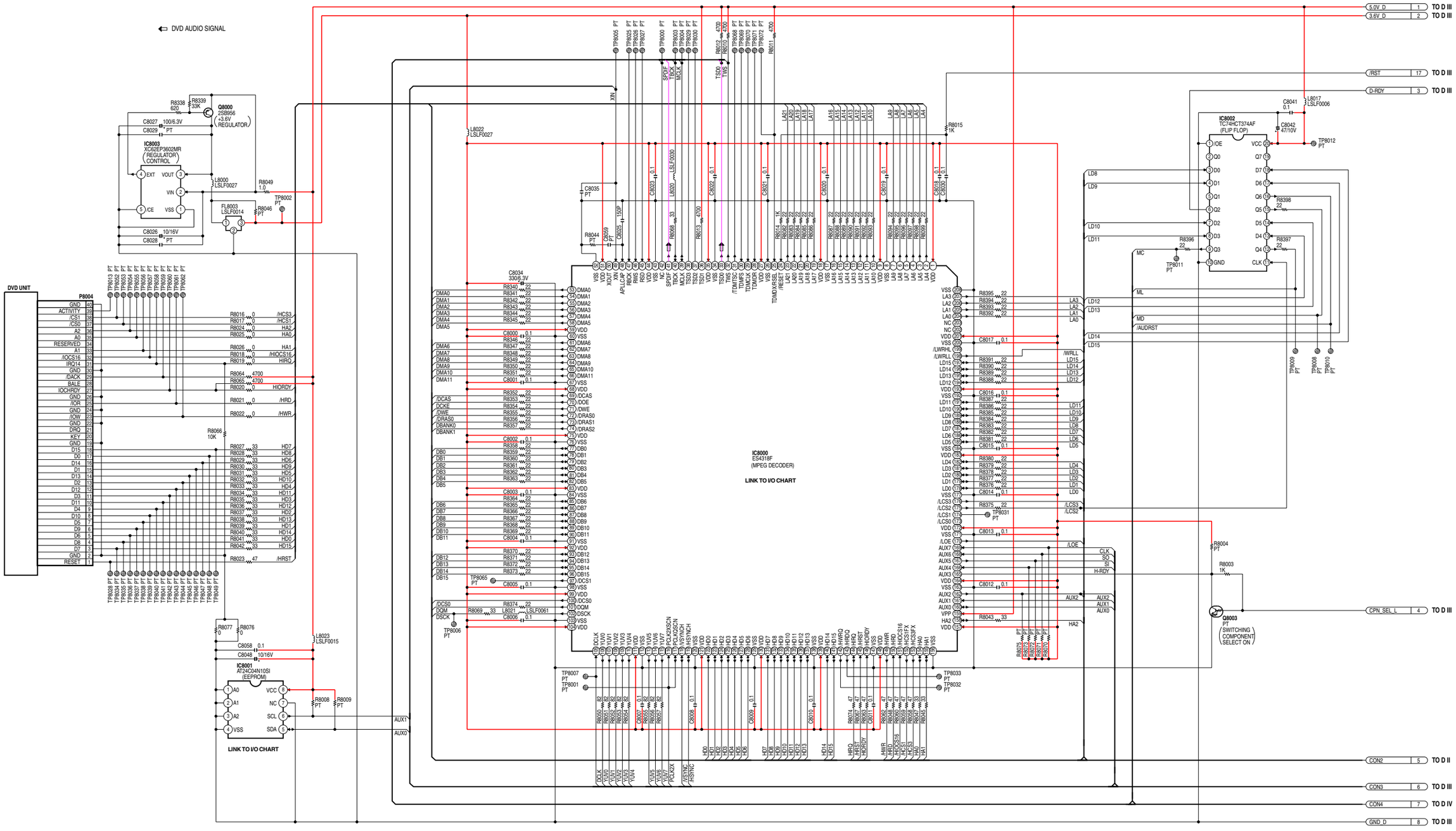
OPERATION SCHEMATIC DIAGRAM

DVD DECODER I SCHEMATIC DIAGRAM

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts, be sure to use the part number listed in the parts list. Do not use the part number on this diagram.



LINK TO VOLTAGE CHART

LSJB2007
PV-D4742
DVD DECODER I SCHEMATIC DIAGRAM

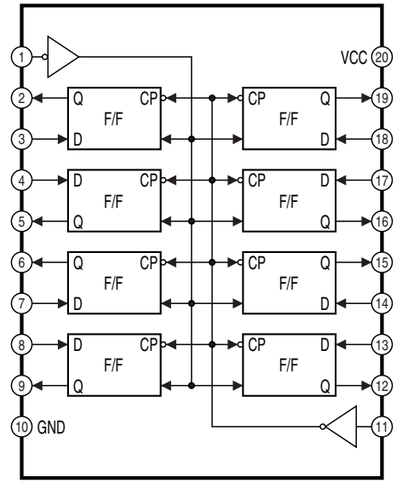
I/O CHART OF IC8000

Pin No.	I/O	Signal Name	Description
1	I	VDD	+3.6V
2	O	LA4	Memory address 4
3	O	LA5	Memory address 5
4	O	LA6	Memory address 6
5	O	LA7	Memory address 7
6	O	LA8	Memory address 8
7	O	LA9	Memory address 9
8	-	VSS	Ground
9	I	VDD	+3.6V
10	O	LA10	Memory address 10
11	O	LA11	Memory address 11
12	O	LA12	Memory address 12
13	O	LA13	Memory address 13
14	O	LA14	Memory address 14
15	O	LA15	Memory address 15
16	O	LA16	Memory address 16
17	-	VSS	Ground
18	I	VDD	+3.6V
19	O	LA17	Memory address 17
20	O	LA18	Memory address 18
21	O	LA19	Memory address 19
22	O	LA20	Memory address 20
23	O	LA21	Memory address 21
24	I	/RESET	Reset : low
25	-	TDMDX/RSEL	(Not used)
26	-	VSS	Ground
27	I	VDD	+3.6V
28	-	TDMDR	(Not used)
29	-	TDMCLK	(Not used)
30	-	TDMFS	(Not used)
31	-	/TDMTSC	(Not used)
32	O	TWS	Audio transmit frame sync
33	O	TSD0	Audio serial data
34	-	VSS	Ground
35	I	VDD	+3.6V
36	-	TSD1	(Not used)
37	-	TSD2	(Not used)
38	-	TSD3	(Not used)
39	I/O	MCLK	Audio master clock
40	I/O	TBCK	Audio transmit bit clock
41	O	SPDIF	IEC958 audio data
42	-	NC	(Not used)
43	-	VSS	Ground
44	I	VDD	+3.6V
45	-	RSD	(Not used)
46	-	RWS	(Not used)
47	-	RBCK	(Not used)
48	-	APLLCAP	(Not used)
49	I	XIN	27MHz clock
50	-	XOUT	(Not used)
51	I	VDD	+3.6V
52	-	VSS	Ground
53	O	DMA0	SDRAM address 0
54	O	DMA1	SDRAM address 1
55	O	DMA2	SDRAM address 2
56	O	DMA3	SDRAM address 3
57	O	DMA4	SDRAM address 4
58	O	DMA5	SDRAM address 5
59	I	VDD	+3.6V
60	-	VSS	Ground
61	O	DMA6	SDRAM address 6
62	O	DMA7	SDRAM address 7
63	O	DMA8	SDRAM address 8
64	O	DMA9	SDRAM address 9
65	O	DMA10	SDRAM address 10
66	O	DMA11	SDRAM address 11
67	-	VSS	Ground
68	I	VDD	+3.6V
69	O	/DCAS	Column address strobe : low
70	-	/DOE	(Not used)
71	O	/DWE	Write enable : low
72	O	/DRAS0	Row address strobe : low
73	-	/DRAS1	(Not used)
74	-	/DRAS2	(Not used)
75	I	VDD	+3.6V
76	-	VSS	Ground
77	I/O	DB0	SDRAM data 0
78	I/O	DB1	SDRAM data 1
79	I/O	DB2	SDRAM data 2
80	I/O	DB3	SDRAM data 3
81	I/O	DB4	SDRAM data 4
82	I/O	DB5	SDRAM data 5
83	I	VDD	+3.6V
84	-	VSS	Ground
85	I/O	DB6	SDRAM data 6
86	I/O	DB7	SDRAM data 7
87	I/O	DB8	SDRAM data 8
88	I/O	DB9	SDRAM data 9
89	I/O	DB10	SDRAM data 10
90	I/O	DB11	SDRAM data 11
91	-	VSS	Ground
92	I	VDD	+3.6V
93	I/O	DB12	SDRAM data 12
94	I/O	DB13	SDRAM data 13
95	I/O	DB14	SDRAM data 14
96	I/O	DB15	SDRAM data 15
97	O	/DCS1	SDRAM chip select : low
98	-	VSS	Ground
99	I	VDD	+3.6V
100	O	/DCS0	SDRAM chip select : low
101	O	DQM	Data input/output mask
102	O	DSCK	SDRAM clock
103	-	VSS	Ground
104	I	VDD	+3.6V
105	I	DCLK	27MHz clock
106	O	YUV0	YUV data 0
107	O	YUV1	YUV data 1
108	O	YUV2	YUV data 2
109	O	YUV3	YUV data 3
110	O	YUV4	YUV data 4
111	I	VDD	+3.6V
112	-	VSS	Ground
113	I	YUV5	YUV data 5
114	I	YUV6	YUV data 6
115	I	YUV7	YUV data 7
116	I	PCLK2XSCN	2X pixel clock
117	I/O	PCLKQSCN	pixel clock
118	I/O	/VSYNCH	V-sync signal
119	I/O	/HSYNCH	V-sync signal
120	-	VSS	Ground
121	I	VDD	+3.6V
122	I/O	HD0	Host data 0
123	I/O	HD1	Host data 1
124	I/O	HD2	Host data 2
125	I/O	HD3	Host data 3
126	I/O	HD4	Host data 4
127	I/O	HD5	Host data 5
128	I/O	HD6	Host data 6
129	-	VSS	Ground
130	I	VDD	+3.6V
131	I/O	HD7	Host data 7
132	I/O	HD8	Host data 8
133	I/O	HD9	Host data 9
134	I/O	HD10	Host data 10
135	I/O	HD11	Host data 11
136	I/O	HD12	Host data 12
137	I/O	HD13	Host data 13
138	-	VSS	Ground
139	I	VDD	+3.6V
140	I/O	HD14	Host data 14
141	I/O	HD15	Host data 15
142	-	/HWRQ	(Not used)
143	-	/HRDQ	(Not used)
144	I/O	HIRQ	Host interrupt
145	I	/HRST	Host reset : low
146	I	HIORDY	Host I/O ready
147	-	VSS	Ground
148	I	VDD	+3.6V
149	O	/HWR	Host write request : low
150	I	/HRD	Host read request : low
151	I	/HIOCS16	Device 16-bit data transfer
152	O	/HCS1FX	Host select 1
153	O	/HCS3FX	Host select 3
154	I/O	HA0	Host address 0
155	I/O	HA1	Host address 1
156	-	VSS	Ground
157	I	VDD	+3.6V
158	I/O	HA2	Host address 2
159	I	VPP	Peripheral protection voltage
160	I/O	AUX0	I2C serial data
161	I	AUX1	I2C serial clock
162	O	AUX2	DVD ready (Busy : low)
163	-	VSS	Ground
164	I	VDD	+3.6V
165	-	AUX3	(Not used)
166	I	AUX4	DVD chip select : low
167	O	AUX5	Serial data 1
168	I	AUX6	Serial data 0
169	I	AUX7	Serial clock
170	O	/LOE	Output enable : low
171	-	VSS	Ground
172	I	VDD	+3.6V
173	-	/LCS0	(Not used)
174	-	/LCS1	(Not used)
175	O	/LCS2	Clock
176	O	/LCS3	Memory chip select : low
177	-	VSS	Ground
178	I/O	LD0	Memory data 0
179	I/O	LD1	Memory data 1
180	I/O	LD2	Memory data 2
181	I/O	LD3	Memory data 3
182	I/O	LD4	Memory data 4
183	I	VDD	+3.6V
184	-	VSS	Ground
185	I/O	LD5	Memory data 5
186	I/O	LD6	Memory data 6
187	I/O	LD7	Memory data 7
188	I/O	LD8	Memory data 8
189	I/O	LD9	Memory data 9
190	I/O	LD10	Memory data 10
191	I/O	LD11	Memory data 11
192	-	VSS	Ground
193	I	VDD	+3.6V
194	I/O	LD12	Memory data 12
195	I/O	LD13	Memory data 13
196	I/O	LD14	Memory data 14
197	I/O	LD15	Memory data 15
198	O	/LWRLL	Write enable : low
199	-	/LWRHL	(Not used)
200	-	VSS	Ground
201	I	VDD	+3.6V
202	-	NC	(Not used)
203	-	NC	(Not used)
204	O	LA0	Memory address 0
205	O	LA1	Memory address 1
206	O	LA2	Memory address 2
207	O	LA3	Memory address 3
208	-	VSS	Ground

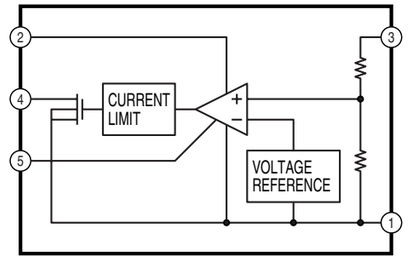
I/O CHART OF IC8001

Pin No.	I/O	Signal Name	Description
1	-	A0	(Not used)
2	-	A1	(Not used)
3	-	A2	(Not used)
4	-	VSS	Ground
5	I/O	SDA	I2C Serial data
6	O	SCL	I2C Serial clock
7	-	NC	(Not used)
8	I	VCC	+5.0V

IC8002 FLIP FLOP IC-DETAIL BLOCK DIAGRAM



IC8003 REGULATOR CONTROL IC-DETAIL BLOCK DIAGRAM



PV-D4742

I/O CHART OF IC8000, 8001

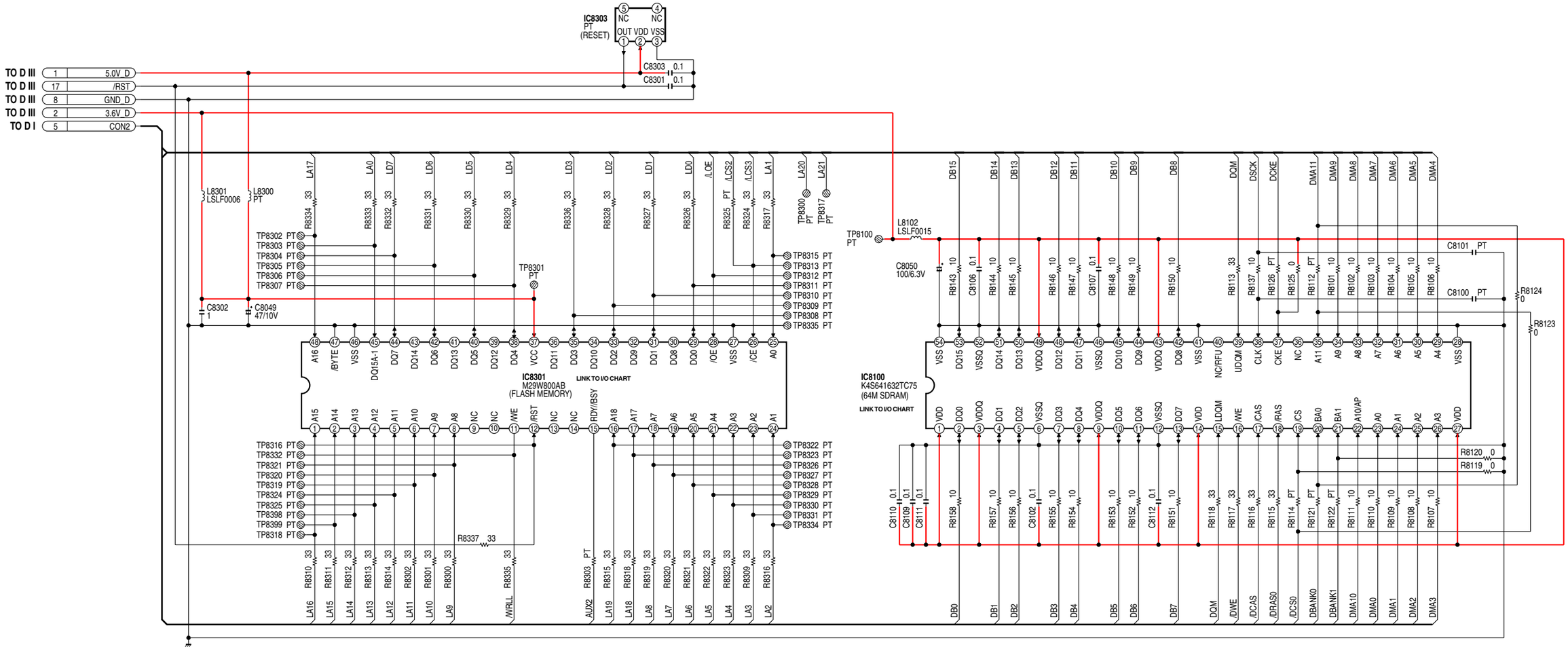
IC8002 DETAIL BLOCK DIAGRAM

DVD DECODER II SCHEMATIC DIAGRAM

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.



LINK TO VOLTAGE CHART

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PV-D4742
DVD DECODER II SCHEMATIC DIAGRAM

I/O CHART OF IC8301

Pin No.	I/O	Signal Name	Description
1	I	A15	Memory address 16
2	I	A14	Memory address 15
3	I	A13	Memory address 14
4	I	A12	Memory address 13
5	I	A11	Memory address 12
6	I	A10	Memory address 11
7	I	A9	Memory address 10
8	I	A8	Memory address 9
9	-	NC	(Not used)
10	-	NC	(Not used)
11	I	/WE	Write enable : low
12	I	/RST	Reset : low
13	-	NC	(Not used)
14	-	NC	(Not used)
15	I	RDY/BSY	DVD Ready (Busy : low)
16	I	A18	Memory address 19
17	I	A17	Memory address 18
18	I	A7	Memory address 8
19	I	A6	Memory address 7
20	I	A5	Memory address 6
21	I	A4	Memory address 5
22	I	A3	Memory address 4
23	I	A2	Memory address 3
24	I	A1	Memory address 2
25	I	A0	Memory address 1
26	I	/CE	Memory chip select : low
27	-	VSS	Ground
28	I	/OE	Output enable : low
29	I/O	DQ0	Memory data 0
30	I/O	DQ8	Memory data 8
31	I/O	DQ1	Memory data 1
32	I/O	DQ9	Memory data 9
33	I/O	DQ2	Memory data 2
34	I/O	DQ10	Memory data 10
35	I/O	DQ3	Memory data 3
36	I/O	DQ11	Memory data 11
37	I	VCC	+5.0V
38	I/O	DQ4	Memory data 4
39	I/O	DQ12	Memory data 12
40	I/O	DQ5	Memory data 5
41	I/O	DQ13	Memory data 13
42	I/O	DQ6	Memory data 6
43	I/O	DQ14	Memory data 14
44	I/O	DQ7	Memory data 7
45	I/O	DQ15A-1	Memory address 0
46	-	VSS	Ground
47	-	/BYTE	Ground
48	I	A16	Memory address 16

I/O CHART OF IC8100

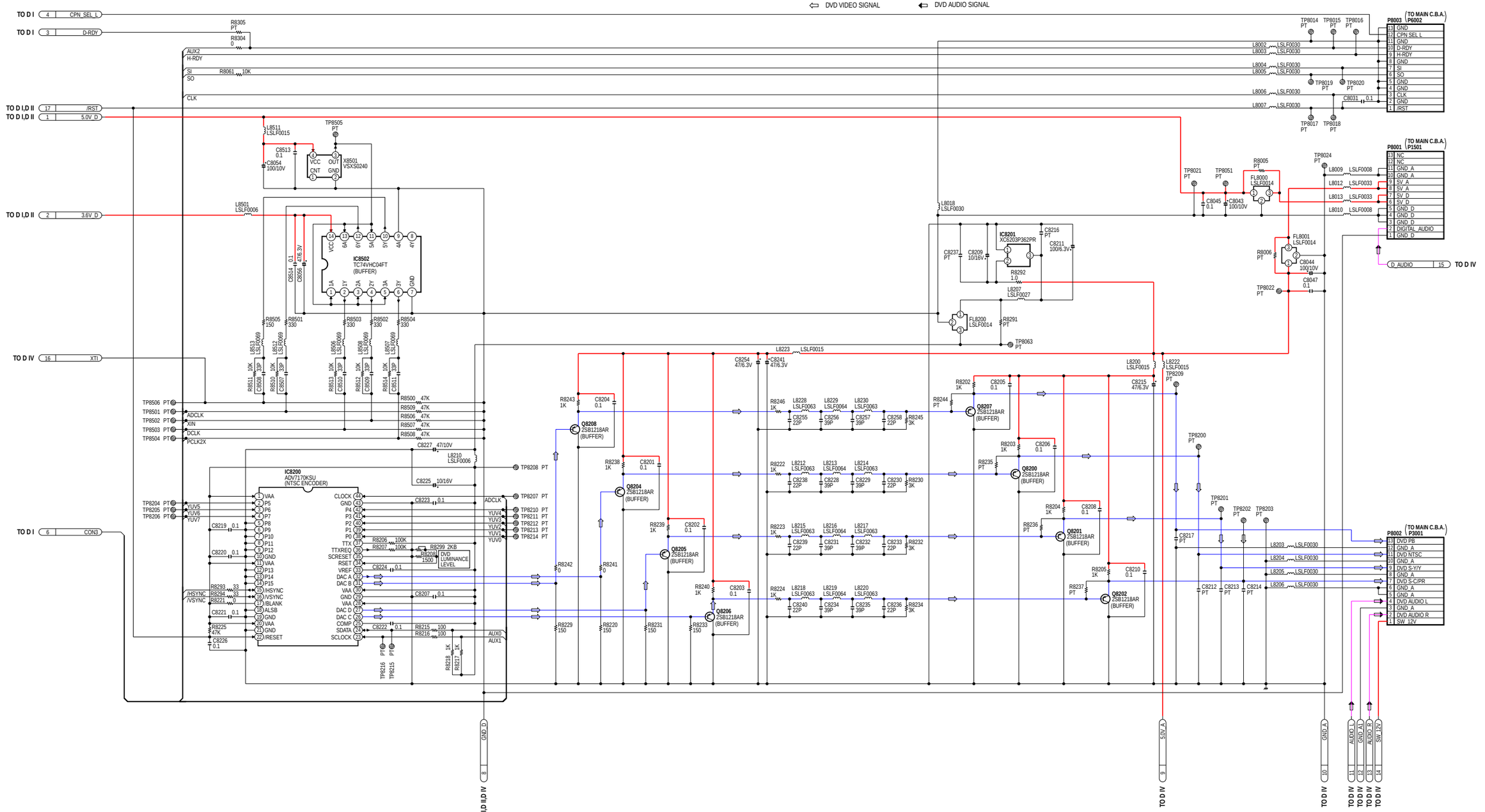
Pin No.	I/O	Signal Name	Description
1	I	VDD	+3.6V
2	I/O	DQ0	SDRAM data 7
3	I	VDDQ	+3.6V
4	I/O	DQ1	SDRAM data 6
5	I/O	DQ2	SDRAM data 5
6	-	VSSQ	Ground
7	I/O	DQ3	SDRAM data 4
8	I/O	DQ4	SDRAM data 3
9	I	VDDQ	+3.6V
10	I/O	DQ5	SDRAM data 2
11	I/O	DQ6	SDRAM data 1
12	-	VSSQ	Ground
13	I/O	DQ7	SDRAM data 0
14	I	VDD	+3.6V
15	I	LDQM	Data input/output mask
16	I	/WE	Write enable : low
17	I	/CAS	Column address strobe : low
18	I	/RAS	Row address strobe : low
19	I	/CS	SDRAM chip select : low
20	I	BA0	(Not used)
21	I	BA1	(Not used)
22	I	A10	SDRAM address 10
23	I	A0	SDRAM address 0
24	I	A1	SDRAM address 1
25	I	A2	SDRAM address 2
26	I	A3	SDRAM address 3
27	I	VDD	+3.6V
28	-	VSS	Ground
29	I	A4	SDRAM address 4
30	I	A5	SDRAM address 5
31	I	A6	SDRAM address 6
32	I	A7	SDRAM address 7
33	I	A8	SDRAM address 8
34	I	A9	SDRAM address 9
35	I	A11	SDRAM address 11
36	-	NC	(Not used)
37	-	CKE	(Not used)
38	I	CLK	SDRAM clock
39	I	UDQM	Data input/output mask
40	-	NC	(Not used)
41	-	VSS	Ground
42	I/O	DQ8	SDRAM data 8
43	I	VDDQ	+3.6V
44	I/O	DQ9	SDRAM data 9
45	I/O	DQ10	SDRAM data 10
46	-	VSSQ	Ground
47	I/O	DQ11	SDRAM data 11
48	I/O	DQ12	SDRAM data 12
49	I	VDDQ	+3.6V
50	I/O	DQ13	SDRAM data 13
51	I/O	DQ14	SDRAM data 14
52	-	VSSQ	Ground
53	I/O	DQ15	SDRAM data 15
54	-	VSS	Ground

DVD DECODER III SCHEMATIC DIAGRAM

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.


⇦ DVD VIDEO SIGNAL
⇦ DVD AUDIO SIGNAL
TO D I 4 CPN_SEL_L
TO D I 3 D-RDY
TO D I,D II 17 /RST
TO D I,D II 1 5.0V_D
TO D I,D II 2 3.6V_D
TO D IV 16 XTI
TO D I 6 CON3
IC8502 TC74VHC04FT (BUFFER)
IC8200 ADV7170KSU (NTSC ENCODER)
X8501 VSXS0240
IC8201 XC6203P362PR
Q8208 2SB1218AR (BUFFER)
Q8204 2SB1218AR (BUFFER)
Q8205 2SB1218AR (BUFFER)
Q8206 2SB1218AR (BUFFER)
Q8207 2SB1218AR (BUFFER)
Q8200 2SB1218AR (BUFFER)
Q8201 2SB1218AR (BUFFER)
Q8202 2SB1218AR (BUFFER)
P8003 P6002 (TO MAIN C.B.A.)
P8001 LP1501 (TO MAIN C.B.A.)
P8002 P3001 (TO MAIN C.B.A.)
D_AUDIO 15 TO D IV
TO D I,D II,D IV GND_D
TO D IV 5.0V_A
TO D IV GND_A

LINK TO VOLTAGE CHART

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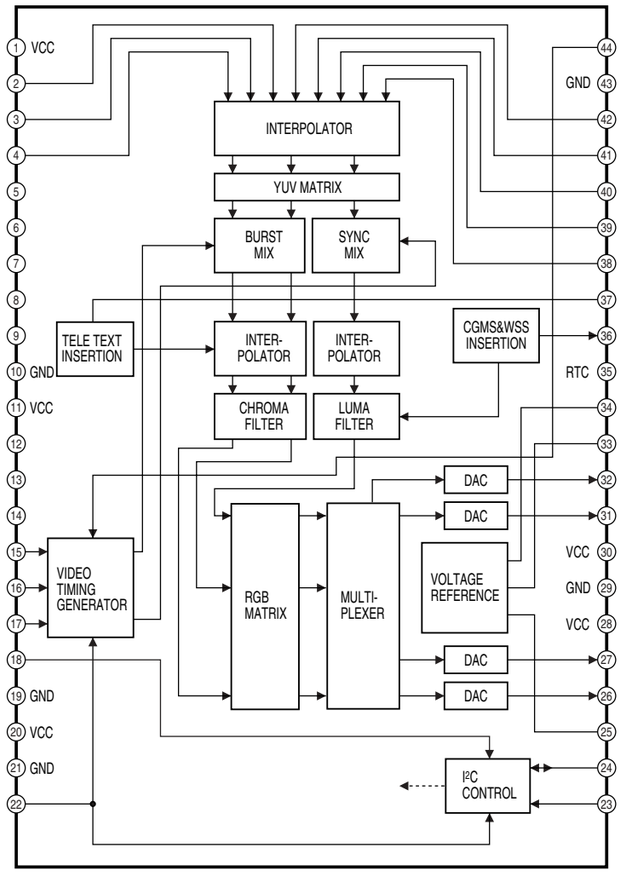
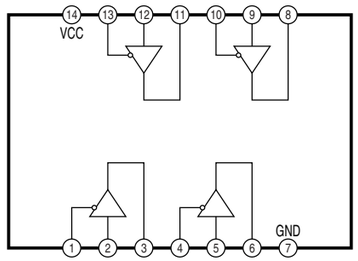
DVD DECODER III SCHEMATIC DIAGRAM

IC8200 NTSC ENCODER IC-DETAIL BLOCK DIAGRAM



IC8502 BUFFER IC-DETAIL BLOCK DIAGRAM



PV-D4742
IC8200, 8502 DETAIL BLOCK DIAGRAM

DVD DECODER IV SCHEMATIC DIAGRAM

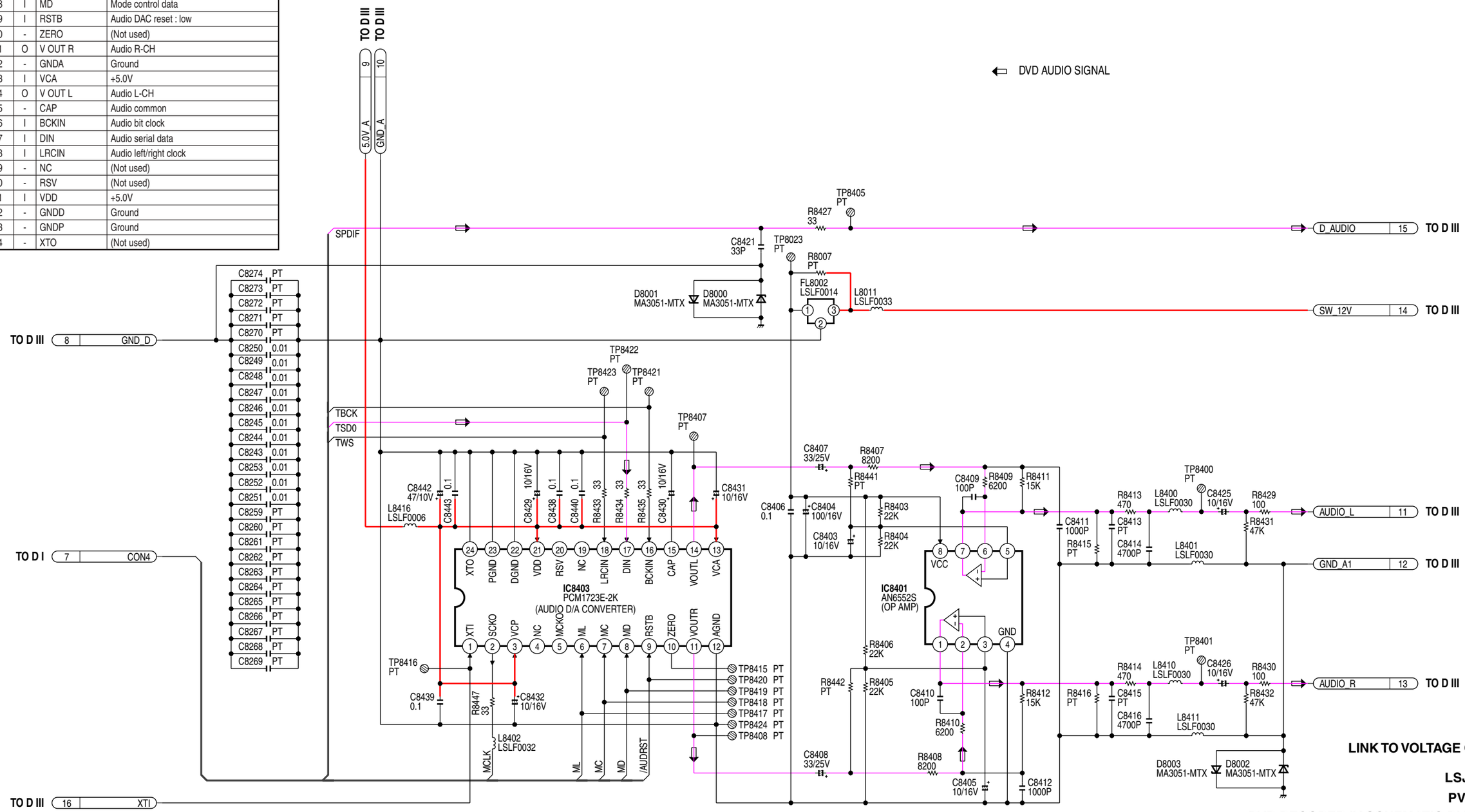
NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

I/O CHART OF IC8403

Pin No.	I/O	Signal Name	Description
1	I	XTI	27MHz clock
2	O	SCKO	System clock
3	I	VCP	+5.0V
4	-	NC	(Not used)
5	-	MCKO	(Not used)
6	I	ML	Mode control latch
7	I	MC	Mode control clock
8	I	MD	Mode control data
9	I	RSTB	Audio DAC reset : low
10	-	ZERO	(Not used)
11	O	V OUT R	Audio R-CH
12	-	GNDA	Ground
13	I	VCA	+5.0V
14	O	V OUT L	Audio L-CH
15	-	CAP	Audio common
16	I	BCKIN	Audio bit clock
17	I	DIN	Audio serial data
18	I	LRCIN	Audio left/right clock
19	-	NC	(Not used)
20	-	RSV	(Not used)
21	I	VDD	+5.0V
22	-	GNDD	Ground
23	-	GNDP	Ground
24	-	XTO	(Not used)



LINK TO VOLTAGE CHART

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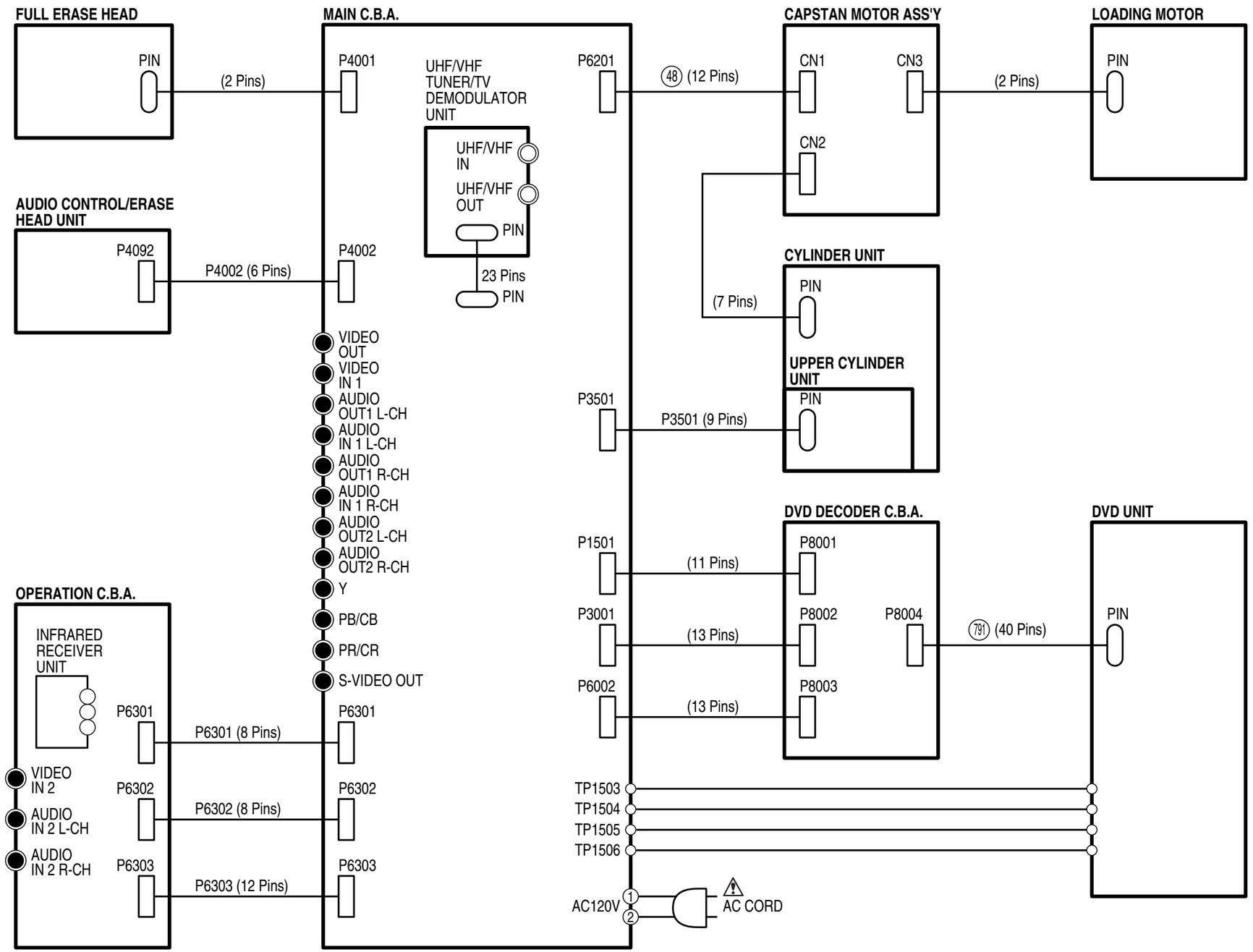
PV-D4742
DVD DECODER IV SCHEMATIC DIAGRAM

INTERCONNECTION SCHEMATIC DIAGRAM

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

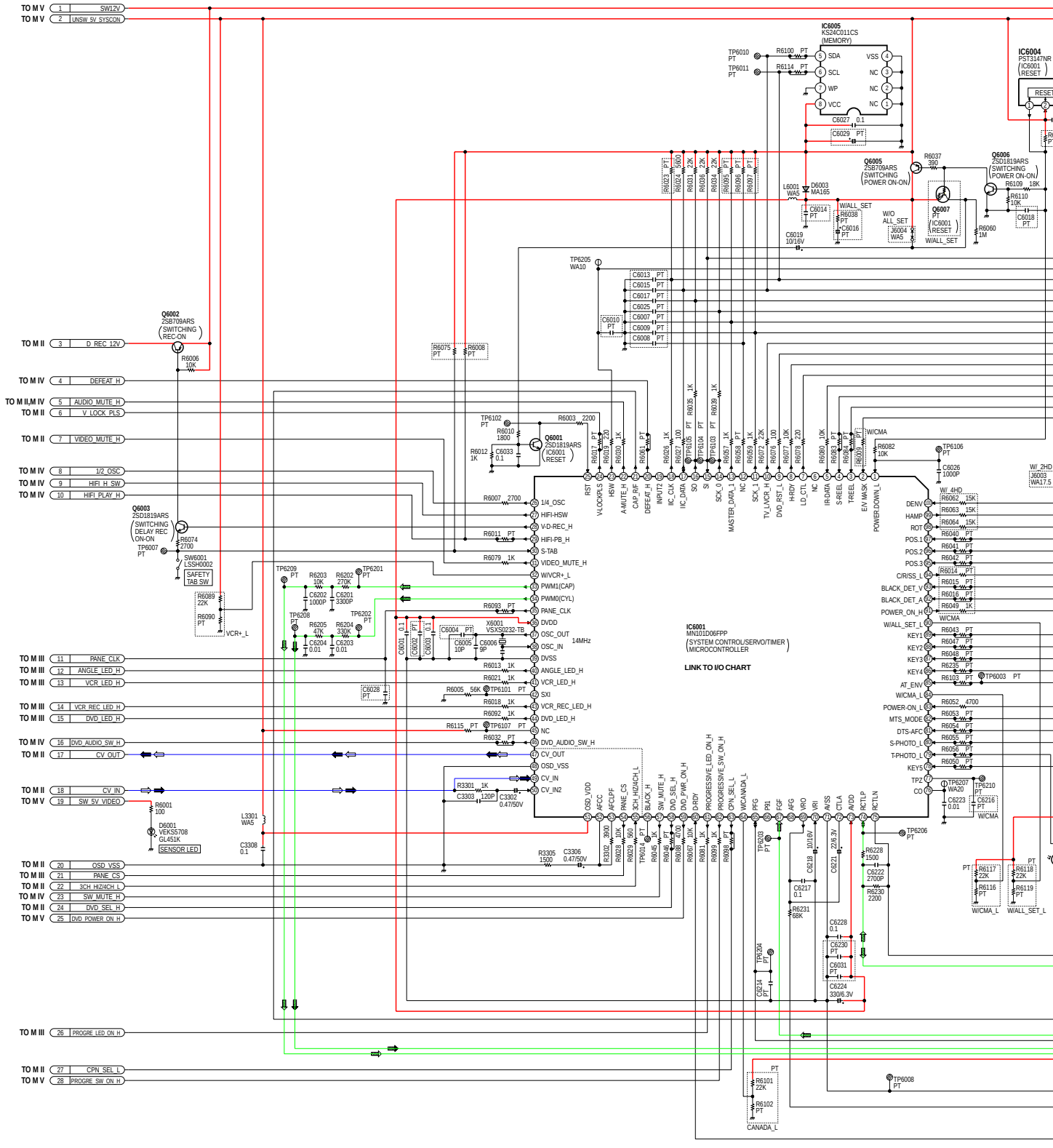
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.



7.2. MAIN SCHEMATIC DIAGRAMS

MAIN I (SYSTEM CONTROL/ SERVO) SCHEMATIC DIAGRAM

REC VIDEO SIGNAL PB VIDEO SIGNAL CAPSTAN SERVO CYLINDER SERVO



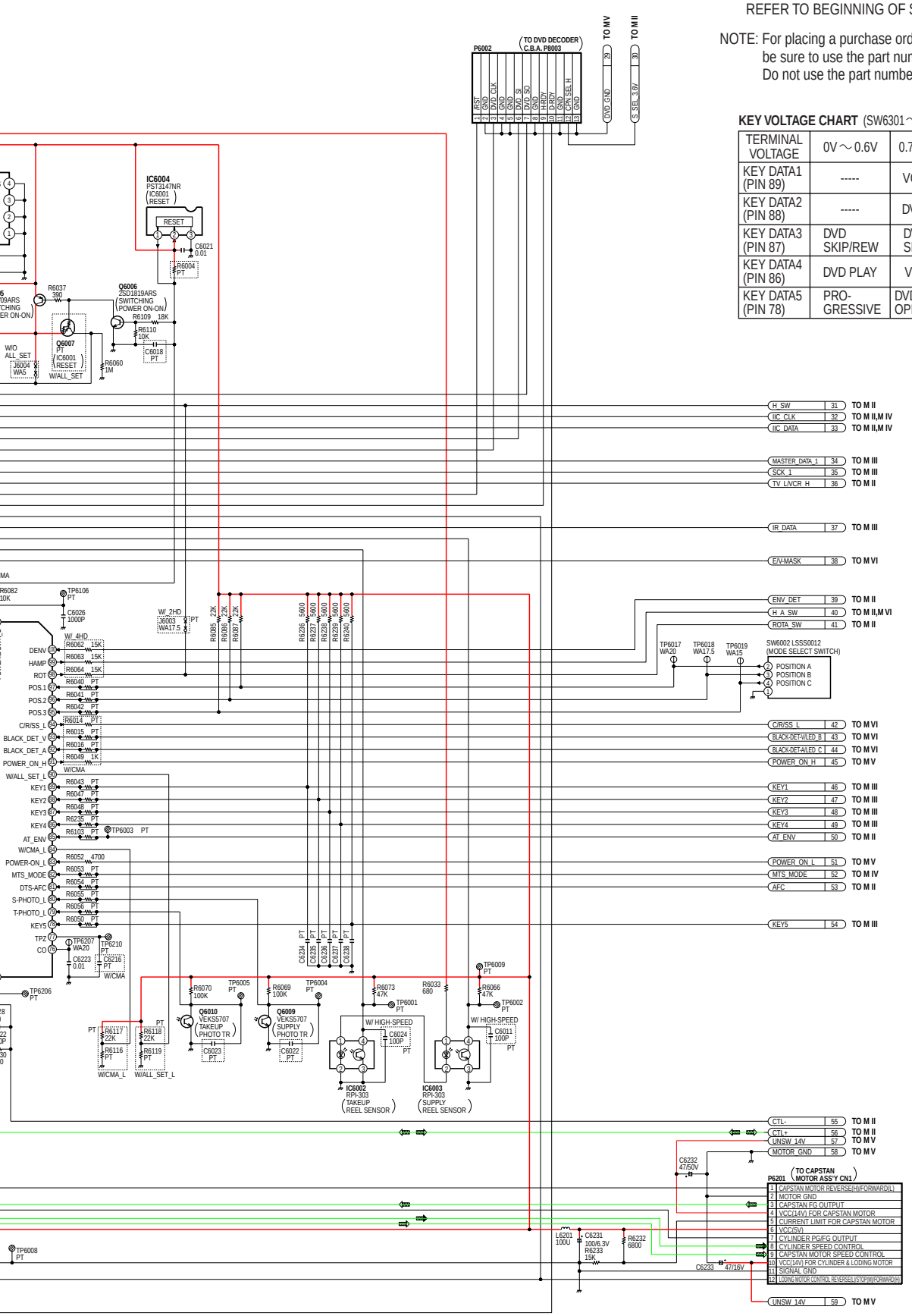
NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

KEY VOLTAGE CHART (SW6301～6304, 6311～6319)

TERMINAL VOLTAGE	0V～0.6V	0.7V～1.9V	2.0V～3.1V	3.2V～4.4V
KEY DATA1 (PIN 89)	-----	VCR PLAY	VCR REW	-----
KEY DATA2 (PIN 88)	-----	DVD STOP	VCR STOP/EJECT	VCR FF
KEY DATA3 (PIN 87)	DVD SKIP/REW	DVD SKIP/FWD	POWER	CH DOWN
KEY DATA4 (PIN 86)	DVD PLAY	VCR REC	VCR/TV	CH UP
KEY DATA5 (PIN 78)	PRO-GRESSIVE	DVD OPEN/CLOSE	DVD PAUSE	-----



LINK TO VOLTAGE CHART

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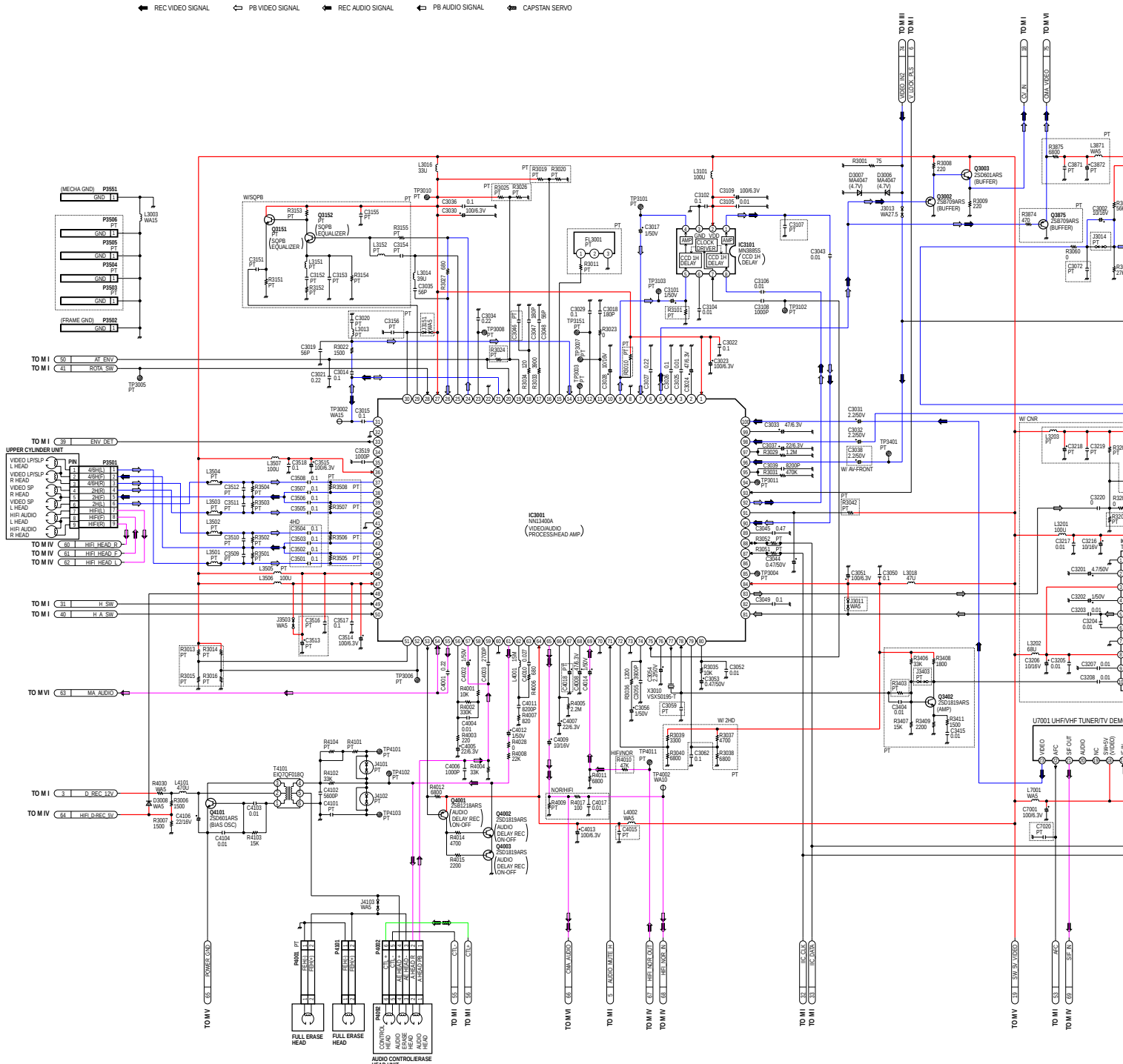
PV-D4742

MAIN I (SYSTEM CONTROL/SERVO) SCHEMATIC DIAGRAM

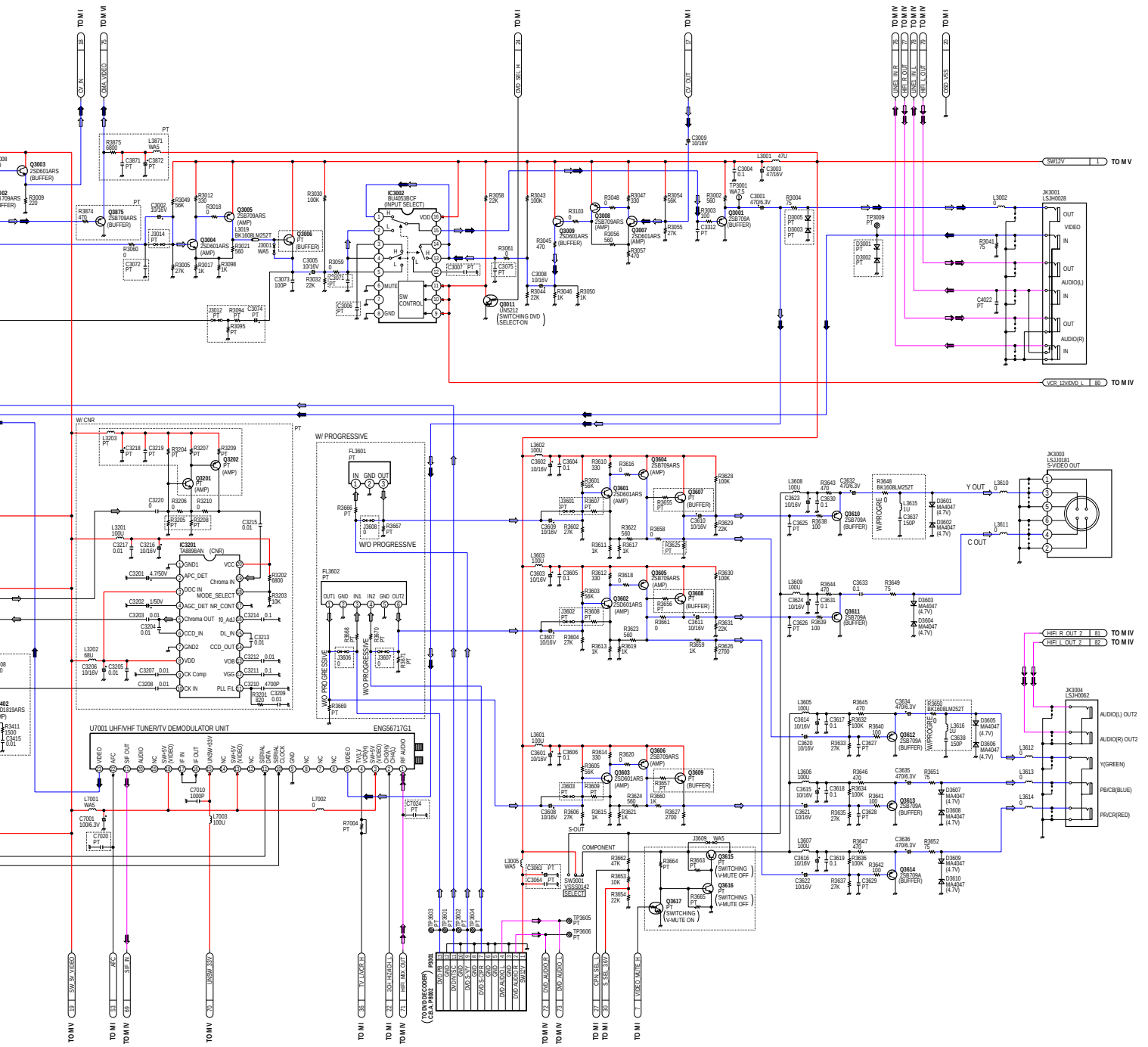
MAIN II (SIGNAL PROCESS/AUDIO) SCHEMATIC DIAGRAM



NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

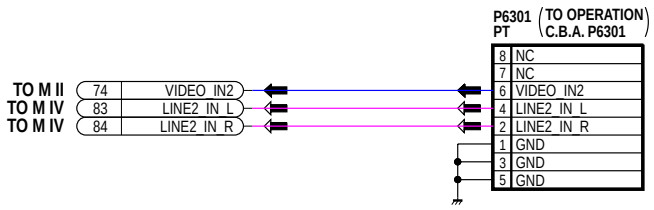


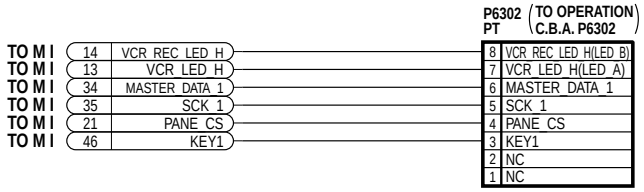
LINK TO VOLTAGE CHART

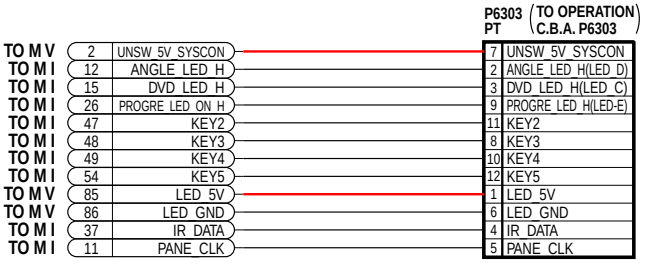
LSJB2015
PV-D4742
MAIN II (SIGNAL PROCESS/ AUDIO) SCHEMATIC DIAGRAM

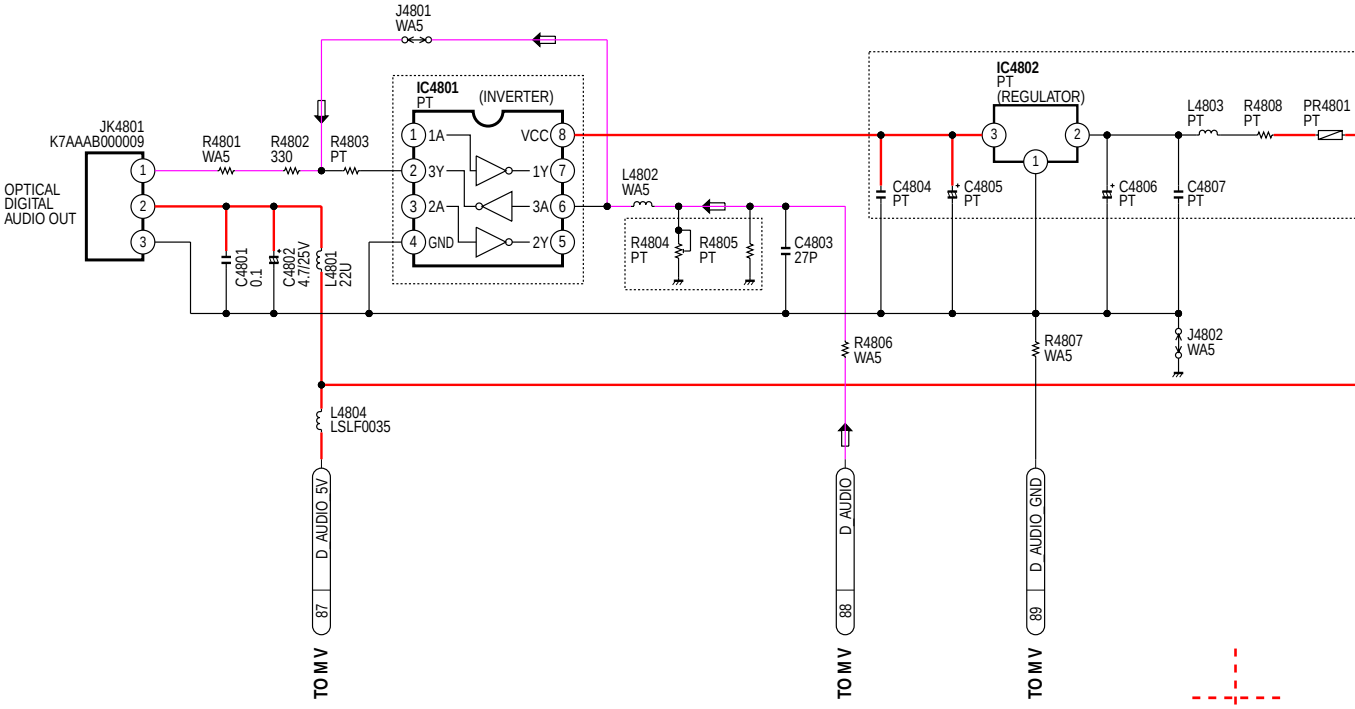
MAIN III (DIGITAL AUDIO OUT) SCHEMATIC DIAGRAM

REC VIDEO SIGNAL REC AUDIO SIGNAL DIGITAL AUDIO SIGNAL





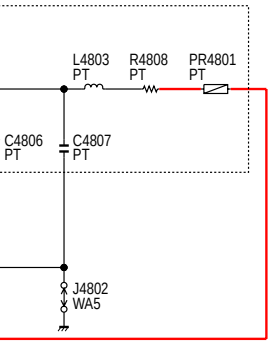




NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

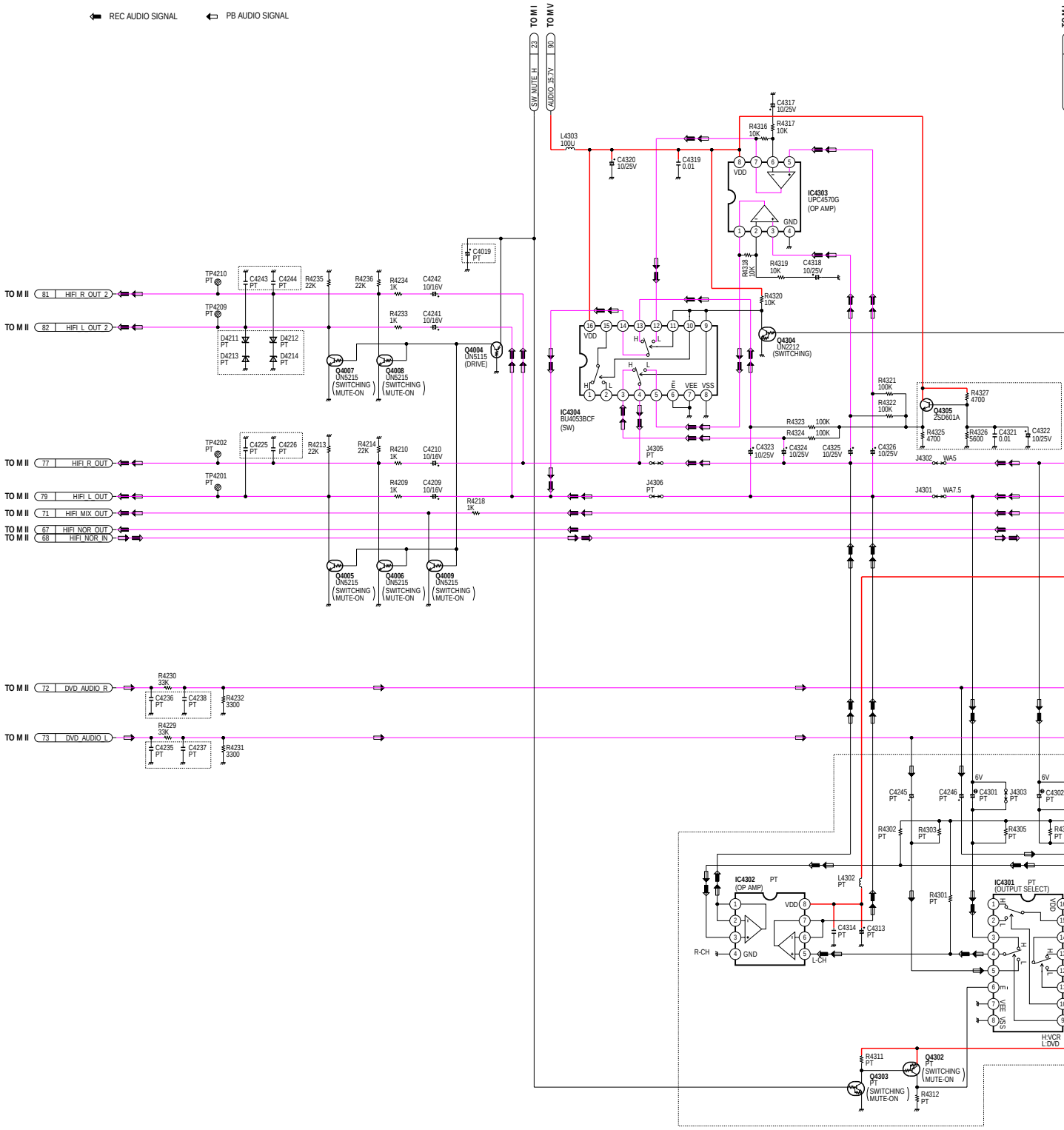
NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.



LINK TO VOLTAGE CHART

LSJB2015
PV-D4742
MAIN III (DIGITAL AUDIO OUT) SCHEMATIC DIAGRAM

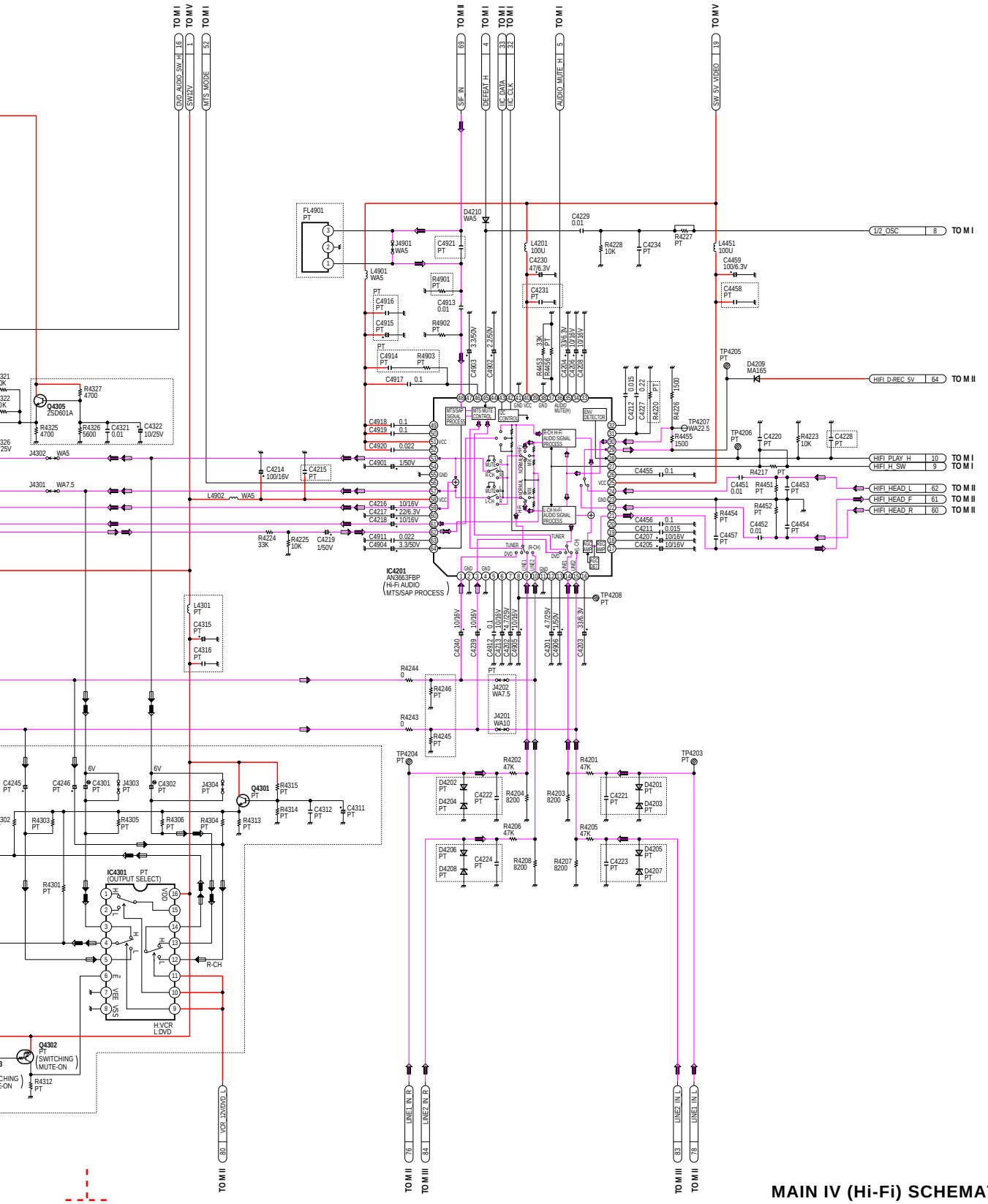
MAIN IV (Hi-Fi) SCHEMATIC DIAGRAM



NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

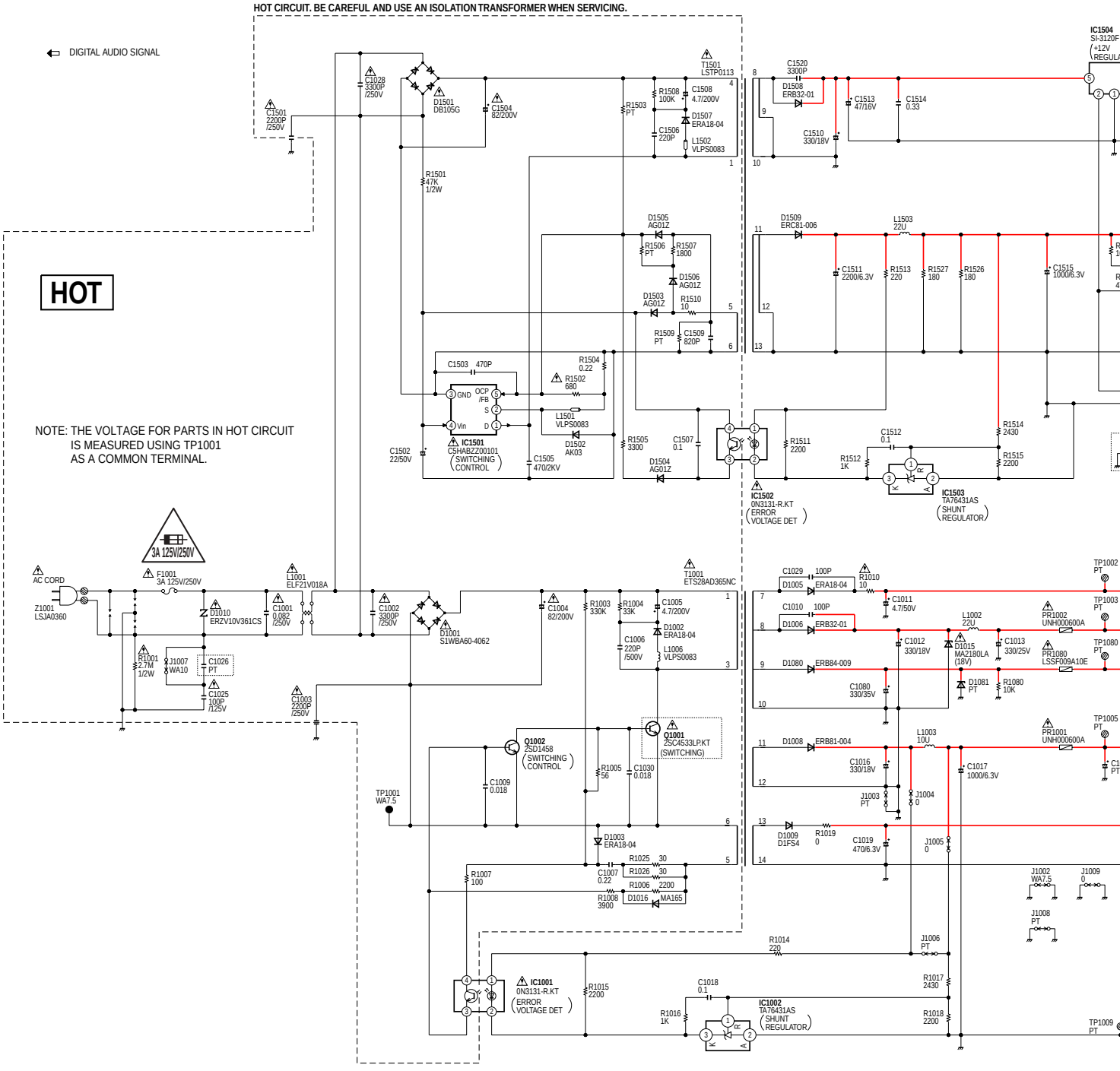
NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.



LSJB2015
PV-D4742
MAIN IV (Hi-Fi) SCHEMATIC DIAGRAM

MAIN V (POWER SUPPLY) SCHEMATIC DIAGRAM

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE 3A 125V/250V FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUE D' INCENDIE N' UTILISERQUE DES FUSIBLE DE MÉME TYPE 3A 125V/250V



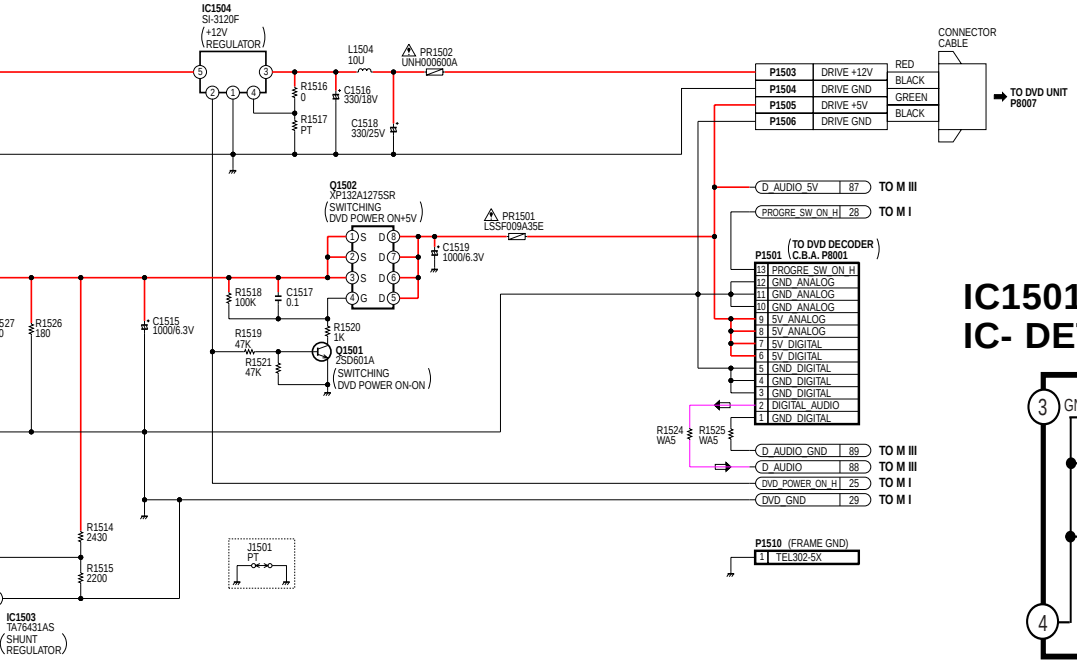
AGAINST FIRE HAZARD,
E TYPE 3A 125V/250V FUSE.
CTION CONTINUE LES RISQUES
ES FUSIBLE DE MÉME

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

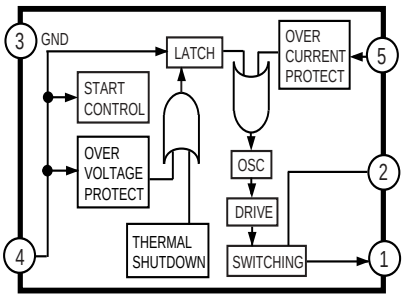
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

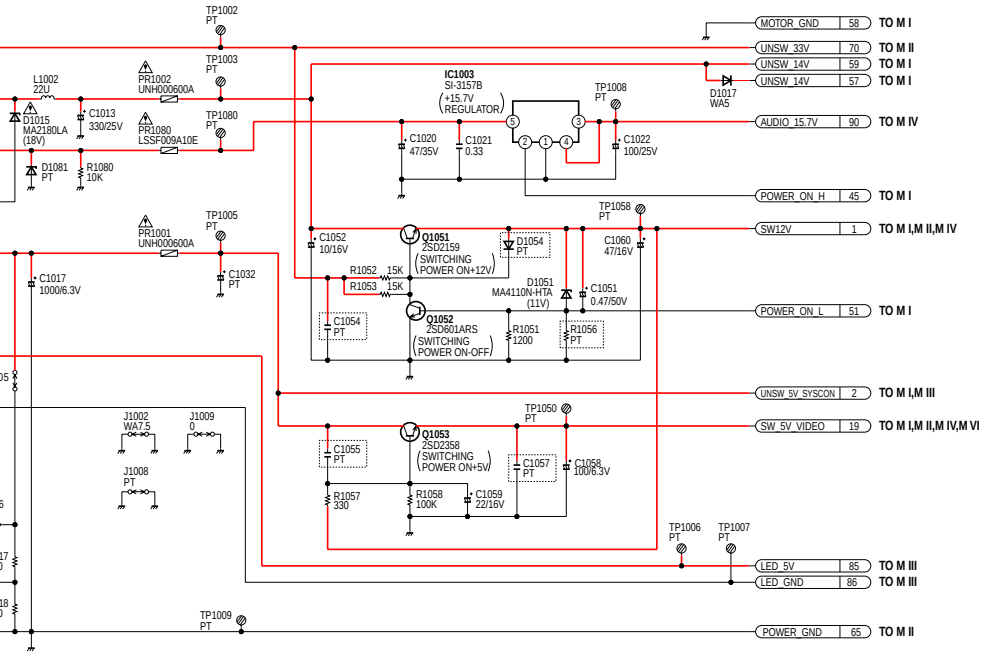
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts, be sure to use the part number listed in the parts list. Do not use the part number on this diagram.

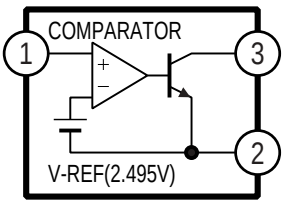


IC1501 SWITCHING CONTROL IC- DETAIL BLOCK DIAGRAM





IC1002, 1503 SHUNT REGULATOR IC- DETAIL BLOCK DIAGRAM



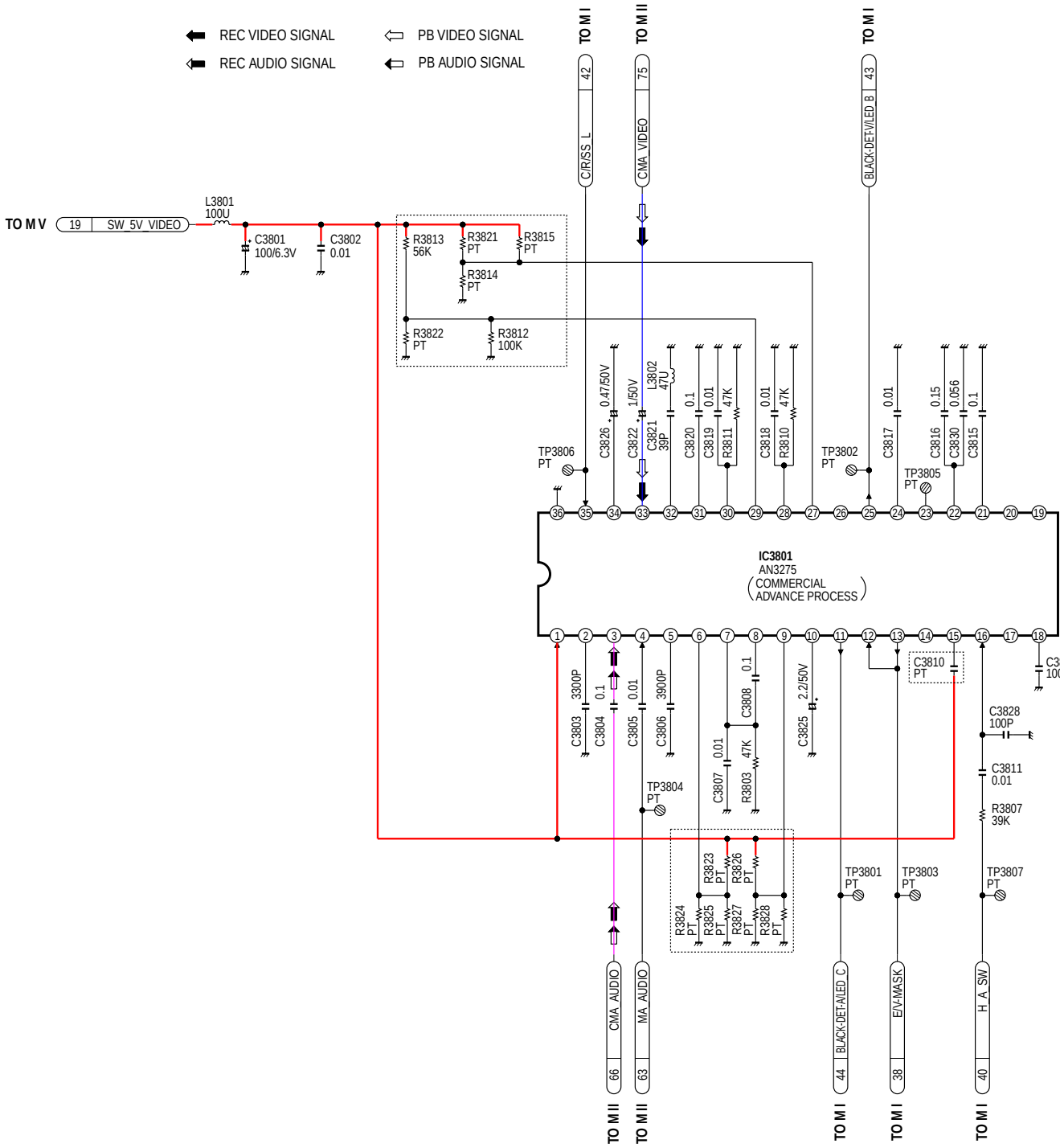
LINK TO VOLTAGE CHART

LSJB2015

PV-D4742

MAIN V (POWER SUPPLY) SCHEMATIC DIAGRAM

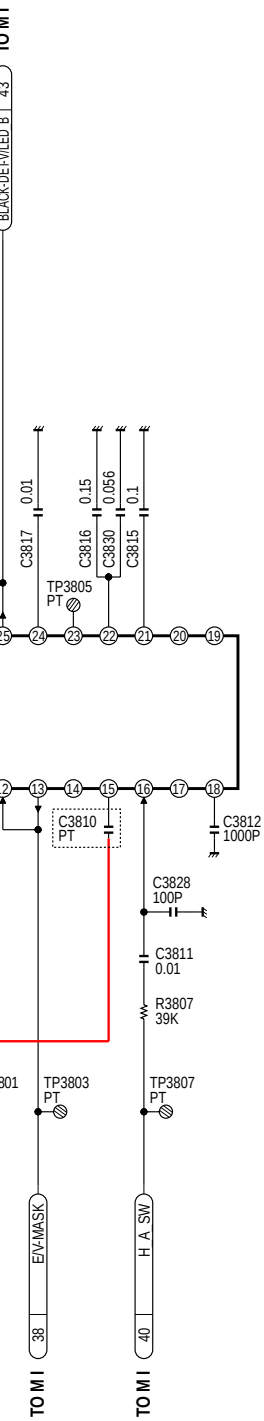
MAIN VI (ADVANCE) SCHEMATIC DIAGRAM (PT)



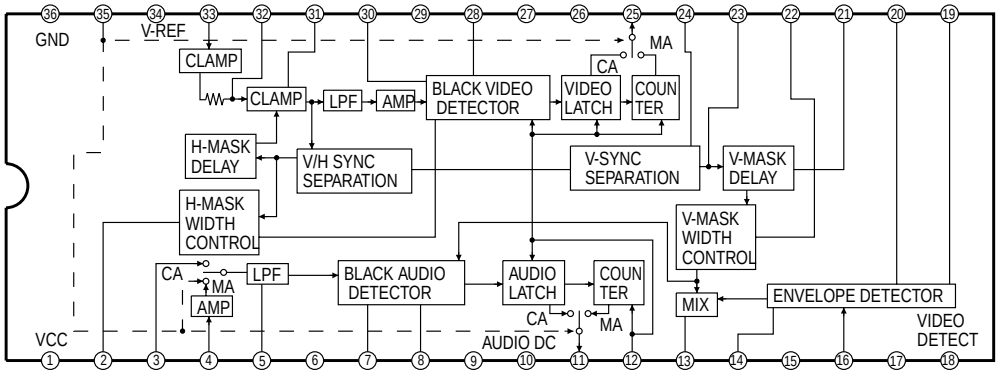
NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

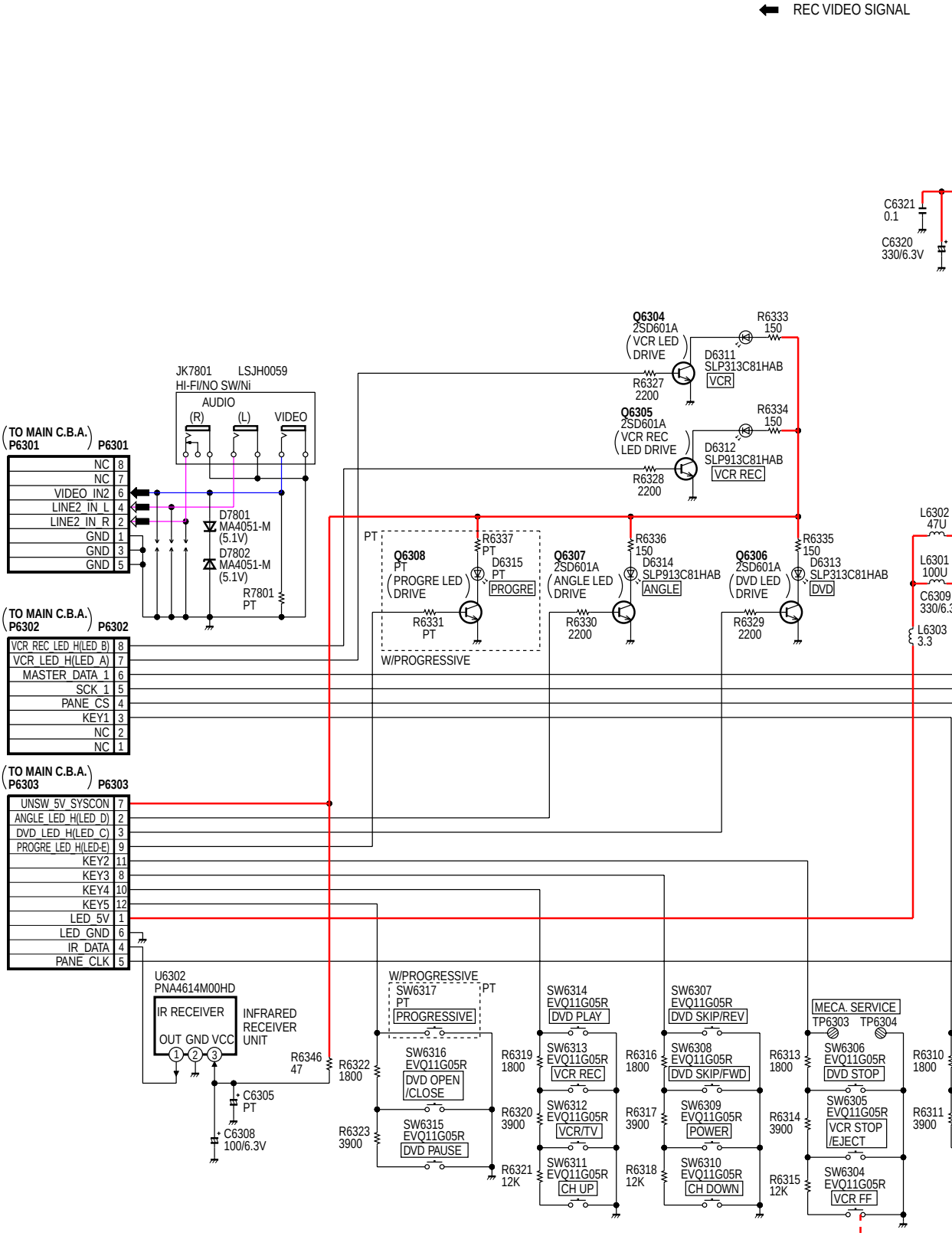


IC3801 COMMERCIAL ADVANCE PROCESS
IC- DETAIL BLOCK DIAGRAM



7.3. OPERATION SCHEMATIC DIAGRAM

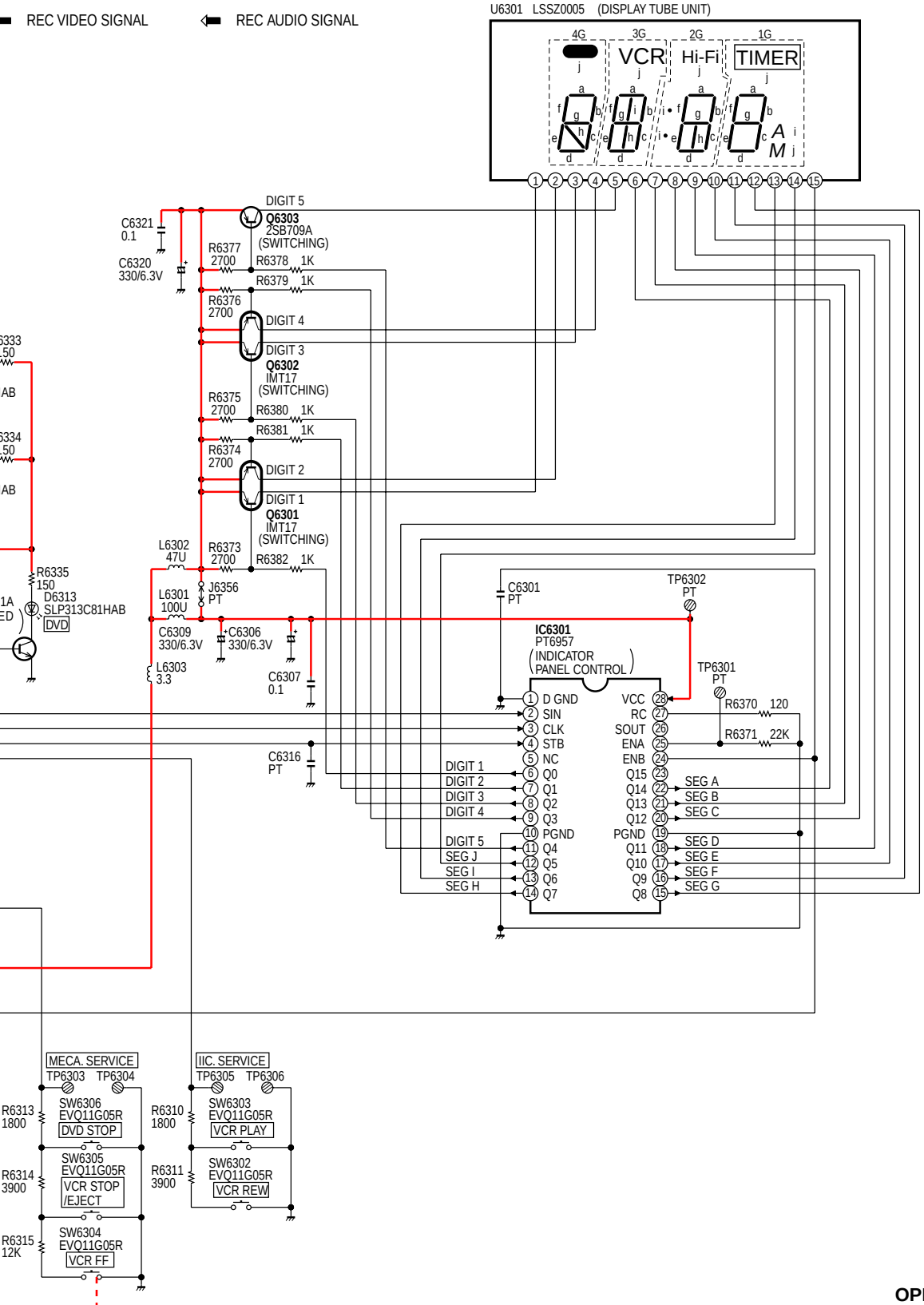
OPERATION SCHEMATIC DIAGRAM



NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.



LINK TO VOLTAGE CHART

LSJB2016

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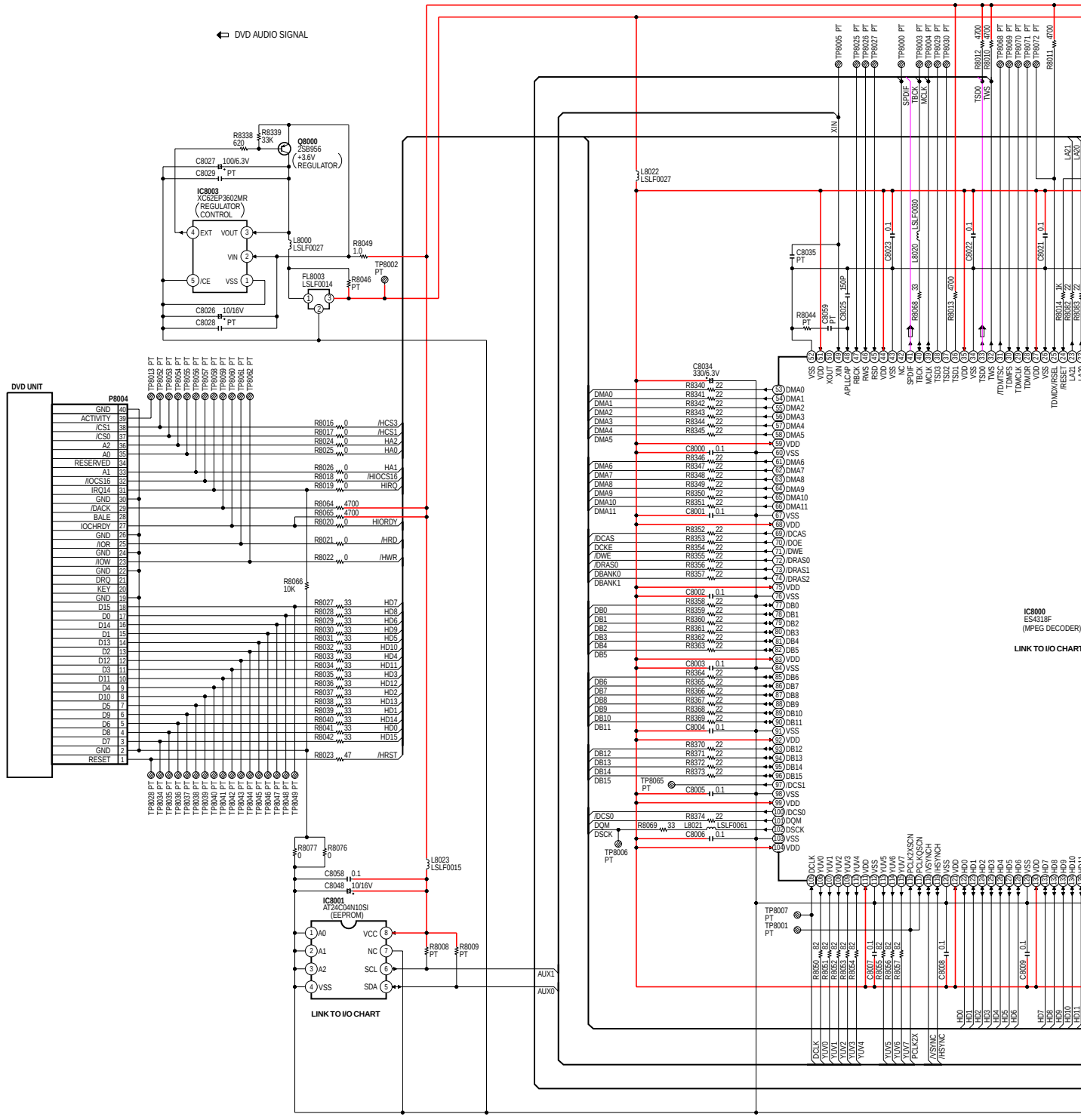
OPERATION SCHEMATIC DIAGRAM

7.4. DVD DECODER SCHEMATIC DIAGRAMS

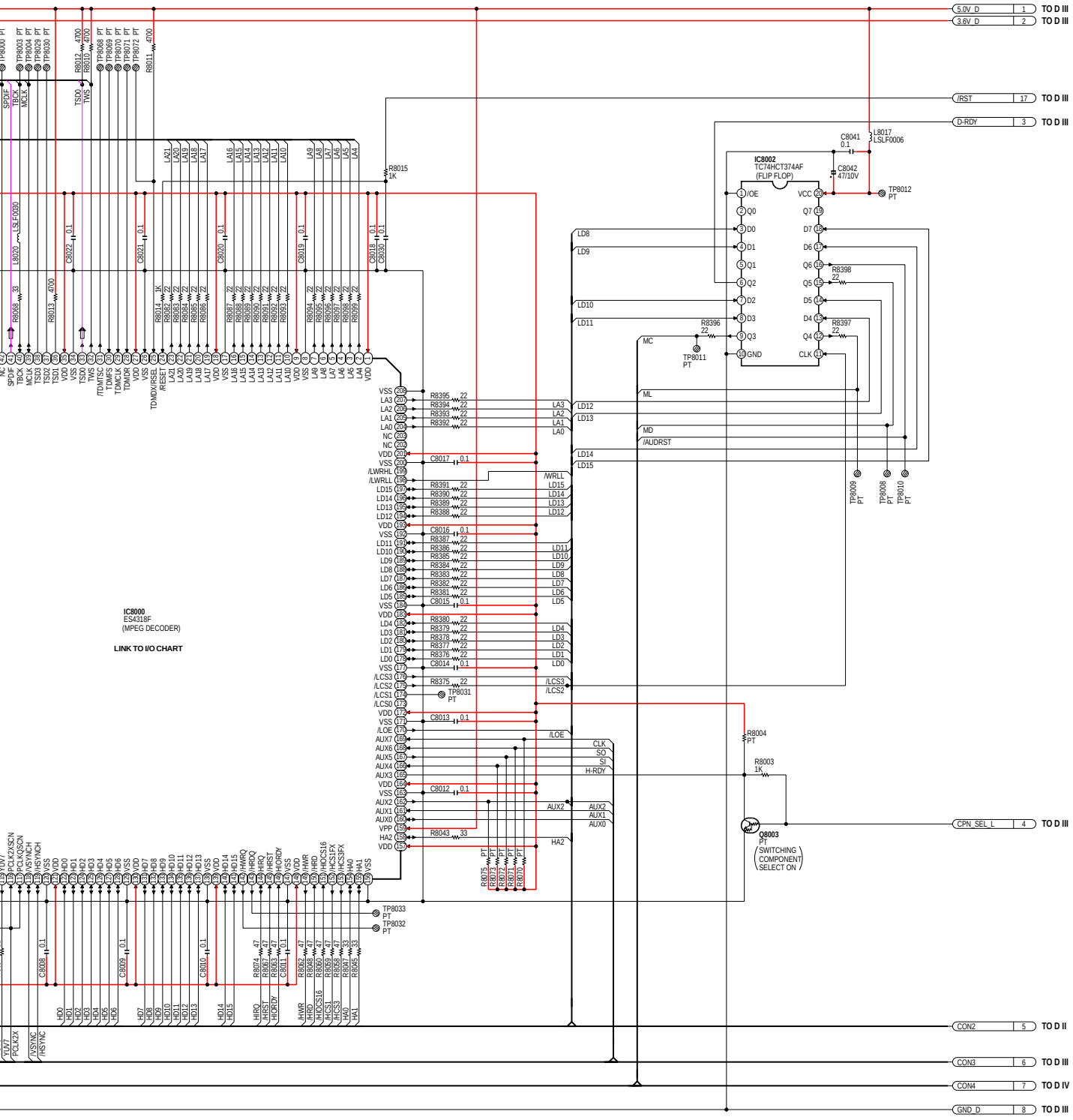
DVD DECODER I SCHEMATIC DIAGRAM



NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

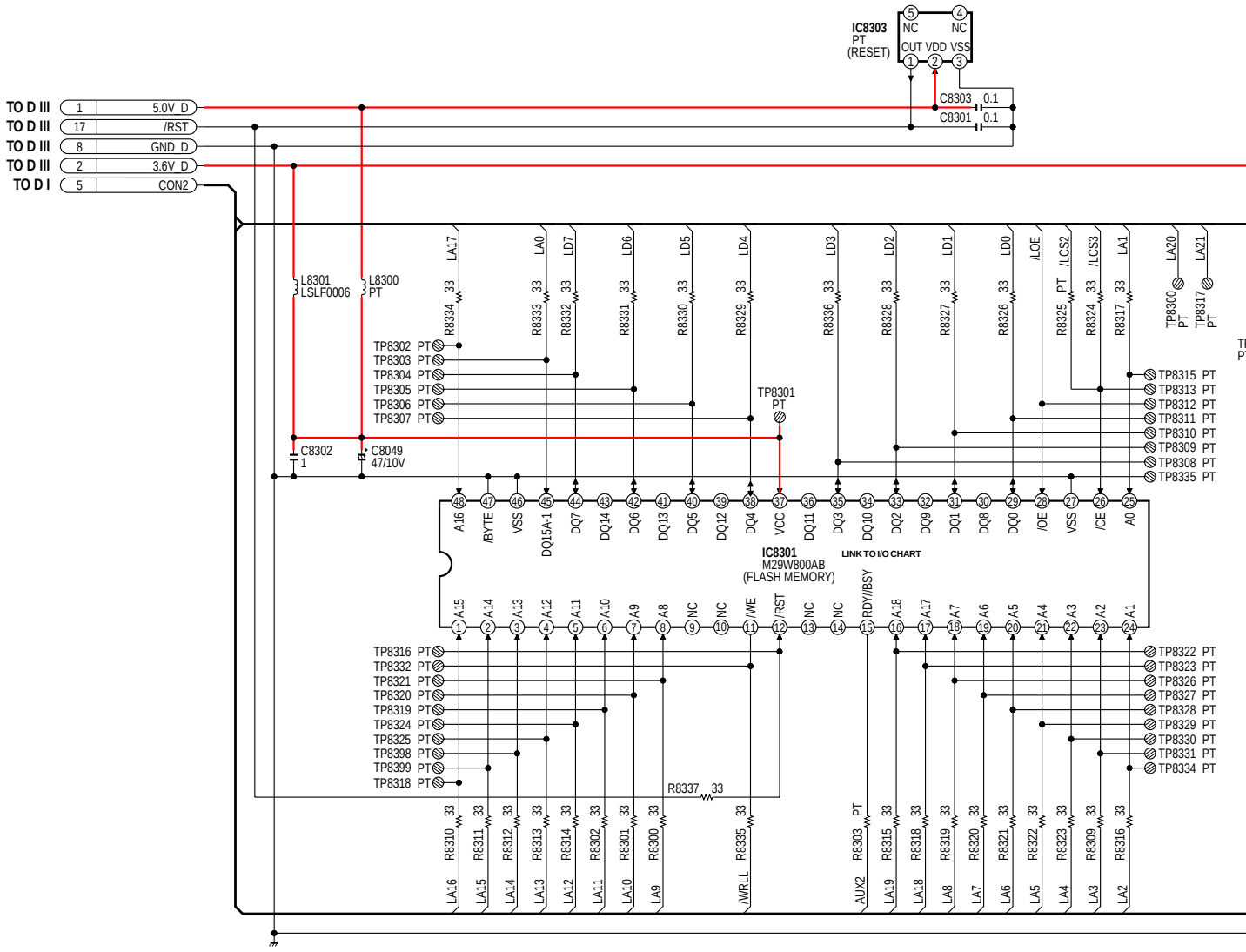
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.



LSJB2007
PV-D4742
DVD DECODER I SCHEMATIC DIAGRAM

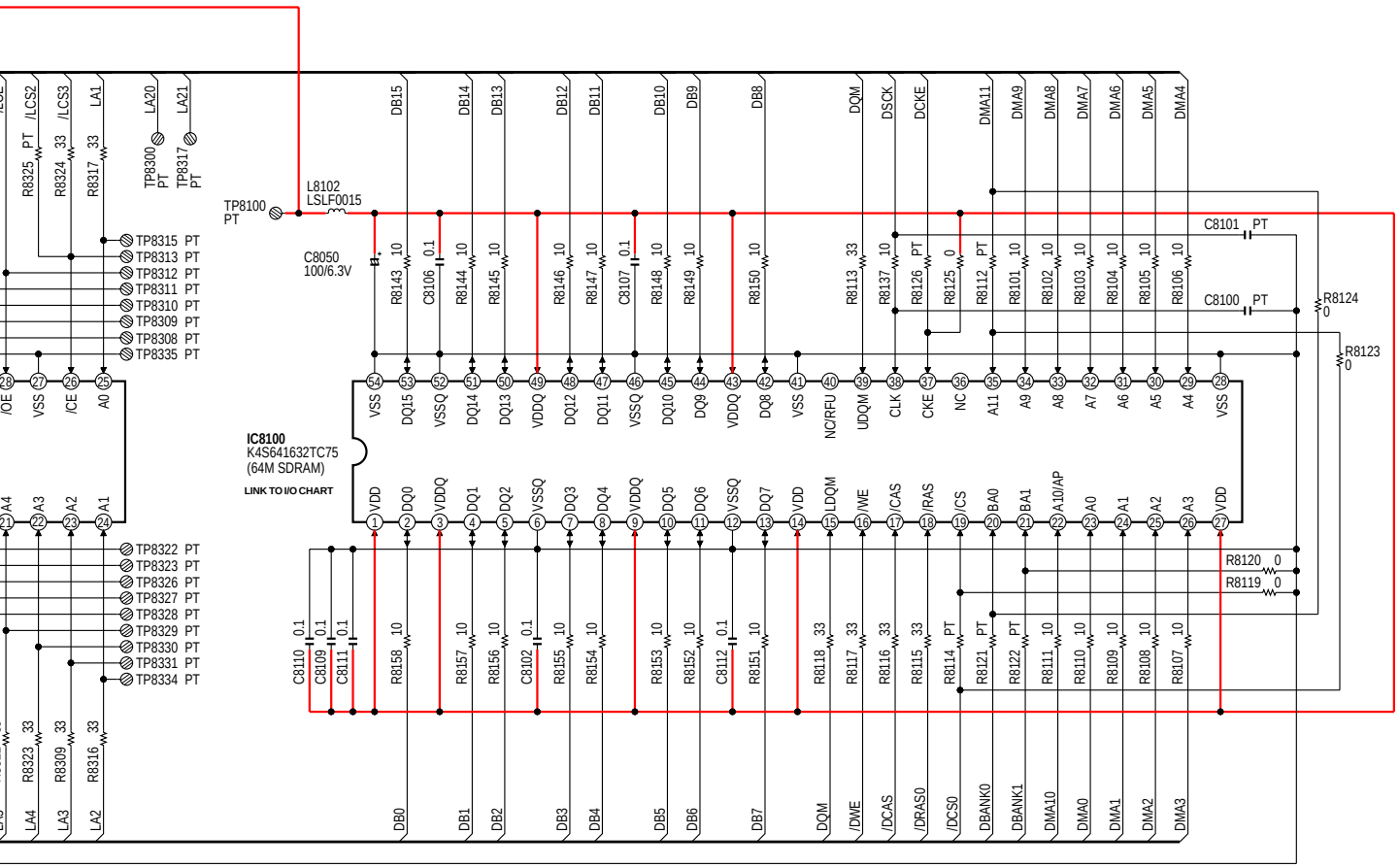
DVD DECODER II SCHEMATIC DIAGRAM


IC8303
PT
(RESET)
NC
NC
OUT VDD VSS
C8303 0.1
C8301 0.1
TO D III 1 5.0V_D
TO D III 17 /RST
TO D III 8 GND_D
TO D III 2 3.6V_D
TO D I 5 CON2
L8301 LSLF0006
L8300 PT
C8302 1
C8049 47/10V
TP8301 PT
IC8301
M29W800AB
(FLASH MEMORY)
LINK TO I/O CHART
A16 /BYTE VSS DQ15A-1 DQ7 DQ14 DQ6 DQ13 DQ5 DQ12 DQ4 VCC DQ11 DQ3 DQ10 DQ2 DQ9 DQ1 DQ8 DQ0 /OE VSS /CE A0
A15 A14 A13 A12 A11 A10 A9 A8 NC NC /WE /RST NC NC RDY/BSY A18 A17 A7 A6 A5 A4 A3 A2 A1
R8337 33
TP8316 PT
TP8332 PT
TP8321 PT
TP8320 PT
TP8319 PT
TP8324 PT
TP8325 PT
TP8398 PT
TP8399 PT
TP8318 PT
TP8322 PT
TP8323 PT
TP8326 PT
TP8327 PT
TP8328 PT
TP8329 PT
TP8330 PT
TP8331 PT
TP8334 PT
TP8315 PT
TP8313 PT
TP8312 PT
TP8311 PT
TP8310 PT
TP8309 PT
TP8308 PT
TP8335 PT
TP8300 PT
TP8317 PT
R8334 R8333 R8332 R8331 R8330 R8329 R8336 R8328 R8327 R8326 R8325 R8324 R8317
R8310 R8311 R8312 R8313 R8314 R8302 R8301 R8300 R8335 R8303 R8315 R8318 R8319 R8320 R8321 R8322 R8323 R8309 R8316
LA16 LA15 LA14 LA13 LA12 LA11 LA10 LA9 /WRLL AUX2 LA19 LA18 LA8 LA7 LA6 LA5 LA4 LA3 LA2
LA17 LA0 LD7 LD6 LD5 LD4 LD3 LD2 LD1 LD0 /LOE /LCS2 /LCS3 LA1 LA20 LA21

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

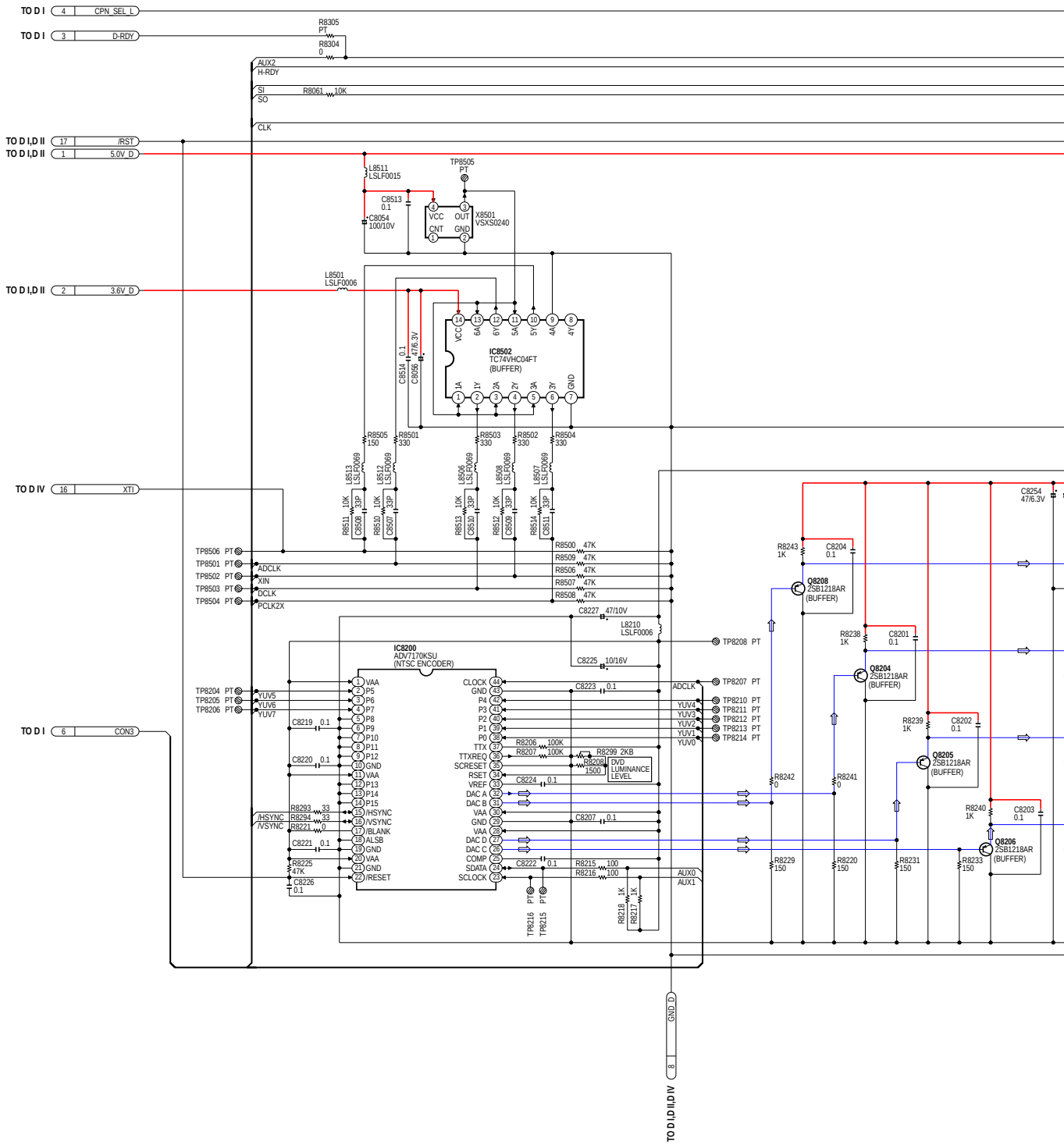
NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.



LINK TO VOLTAGE CHART

LSJB2007
PV-D4742
DVD DECODER II SCHEMATIC DIAGRAM

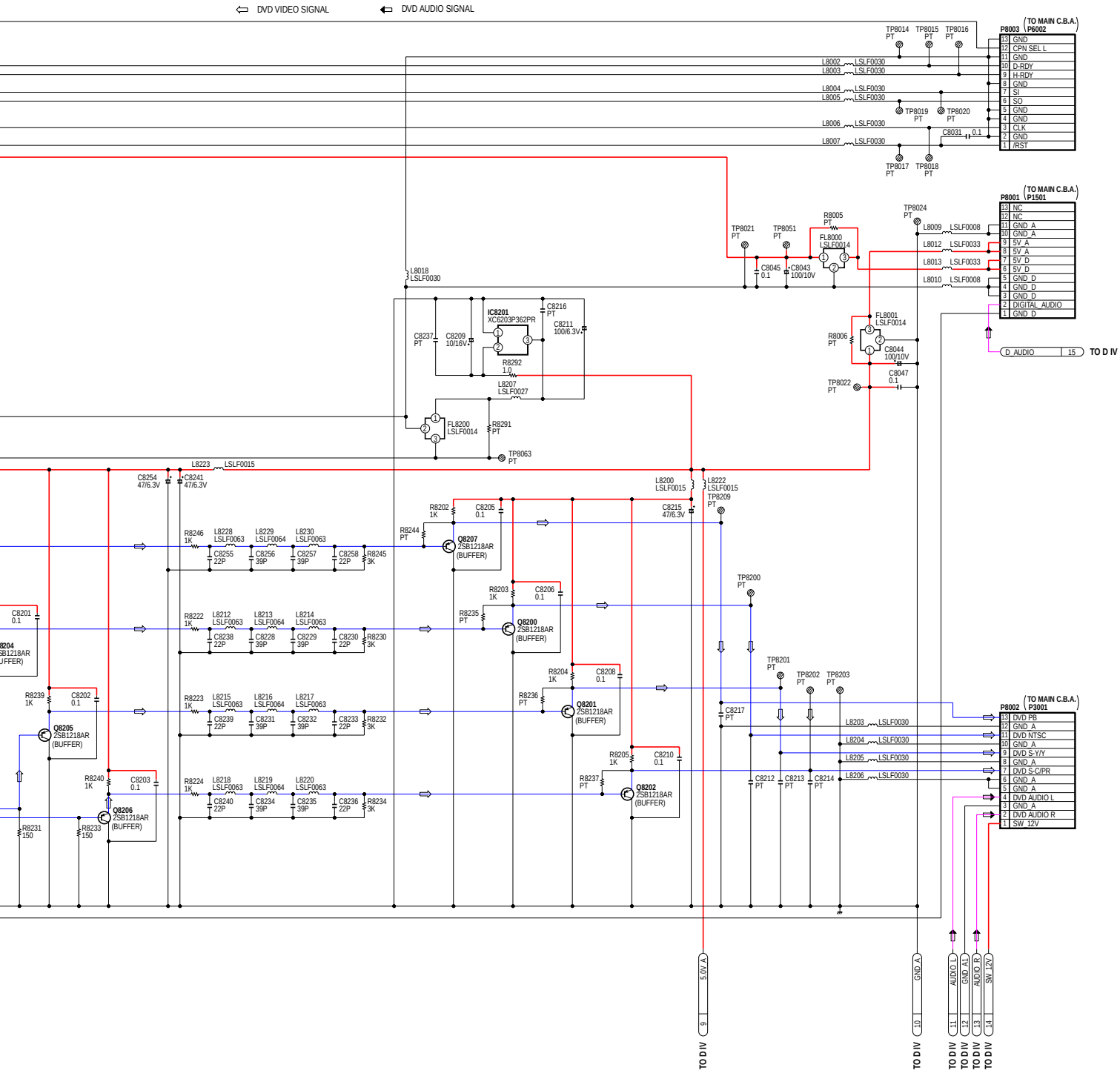
DVD DECODER III SCHEMATIC DIAGRAM



NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.



LINK TO VOLTAGE CHART

LSJB2007

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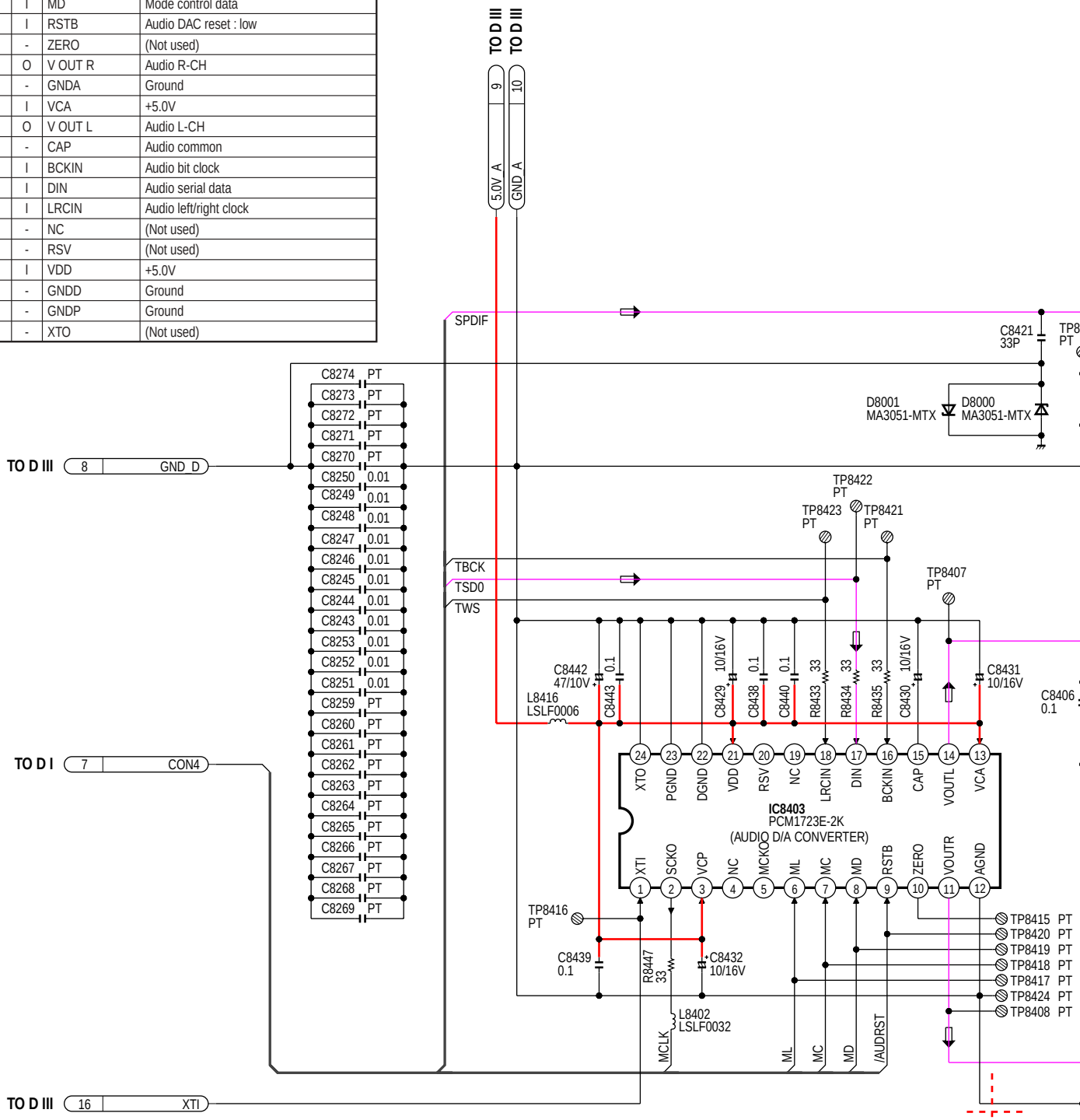
DVD DECODER III SCHEMATIC DIAGRAM

DVD DECODER IV SCHEMATIC DIAGRAM

I/O CHART OF IC8403

Pin No.	I/O	Signal Name	Description
1	I	XTI	27MHz clock
2	O	SCKO	System clock
3	I	VCP	+5.0V
4	-	NC	(Not used)
5	-	MCKO	(Not used)
6	I	ML	Mode control latch
7	I	MC	Mode control clock
8	I	MD	Mode control data
9	I	RSTB	Audio DAC reset : low
10	-	ZERO	(Not used)
11	O	V OUT R	Audio R-CH
12	-	GNDA	Ground
13	I	VCA	+5.0V
14	O	V OUT L	Audio L-CH
15	-	CAP	Audio common
16	I	BCKIN	Audio bit clock
17	I	DIN	Audio serial data
18	I	LRCIN	Audio left/right clock
19	-	NC	(Not used)
20	-	RSV	(Not used)
21	I	VDD	+5.0V
22	-	GNDD	Ground
23	-	GNDP	Ground
24	-	XTO	(Not used)

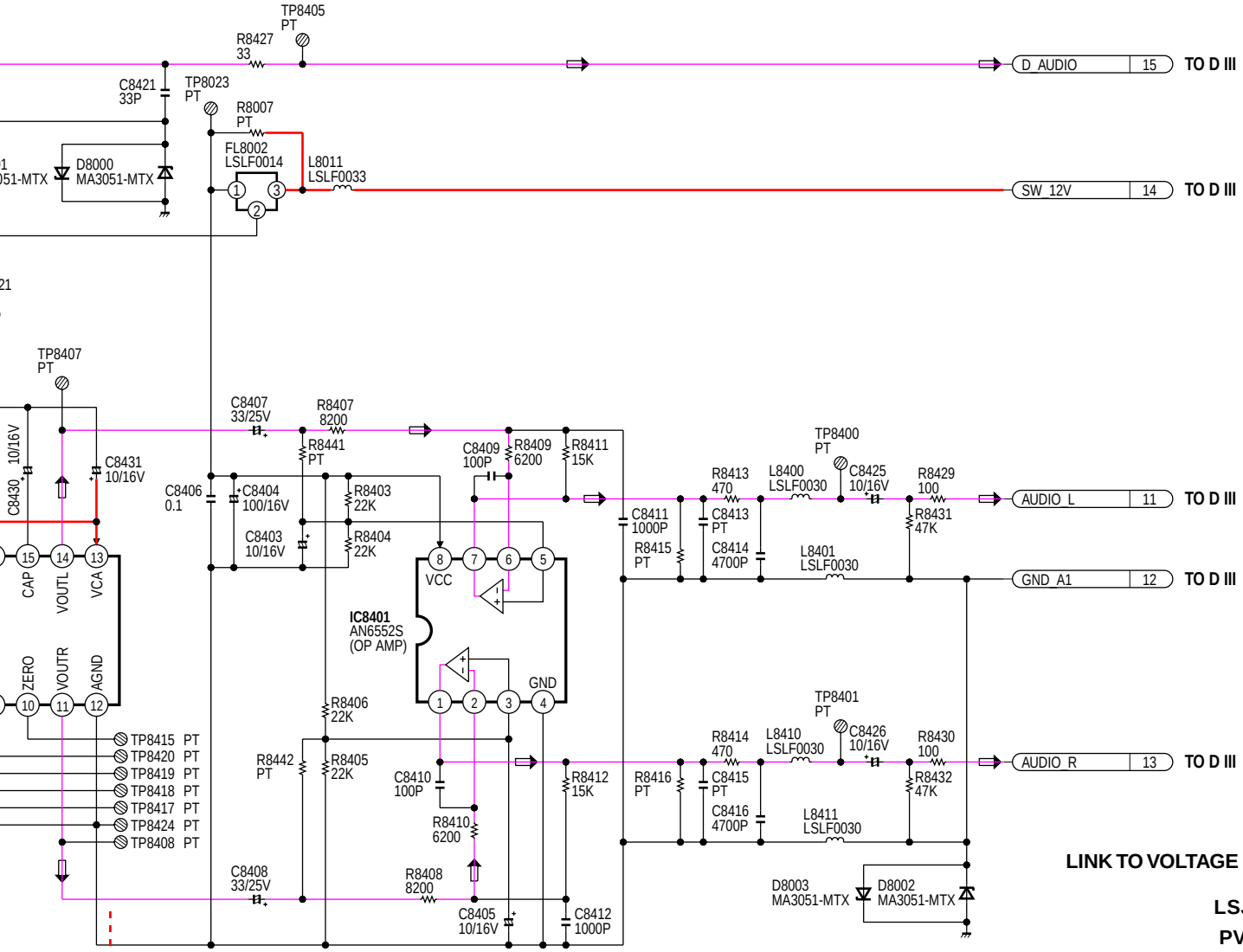


NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

DVD AUDIO SIGNAL



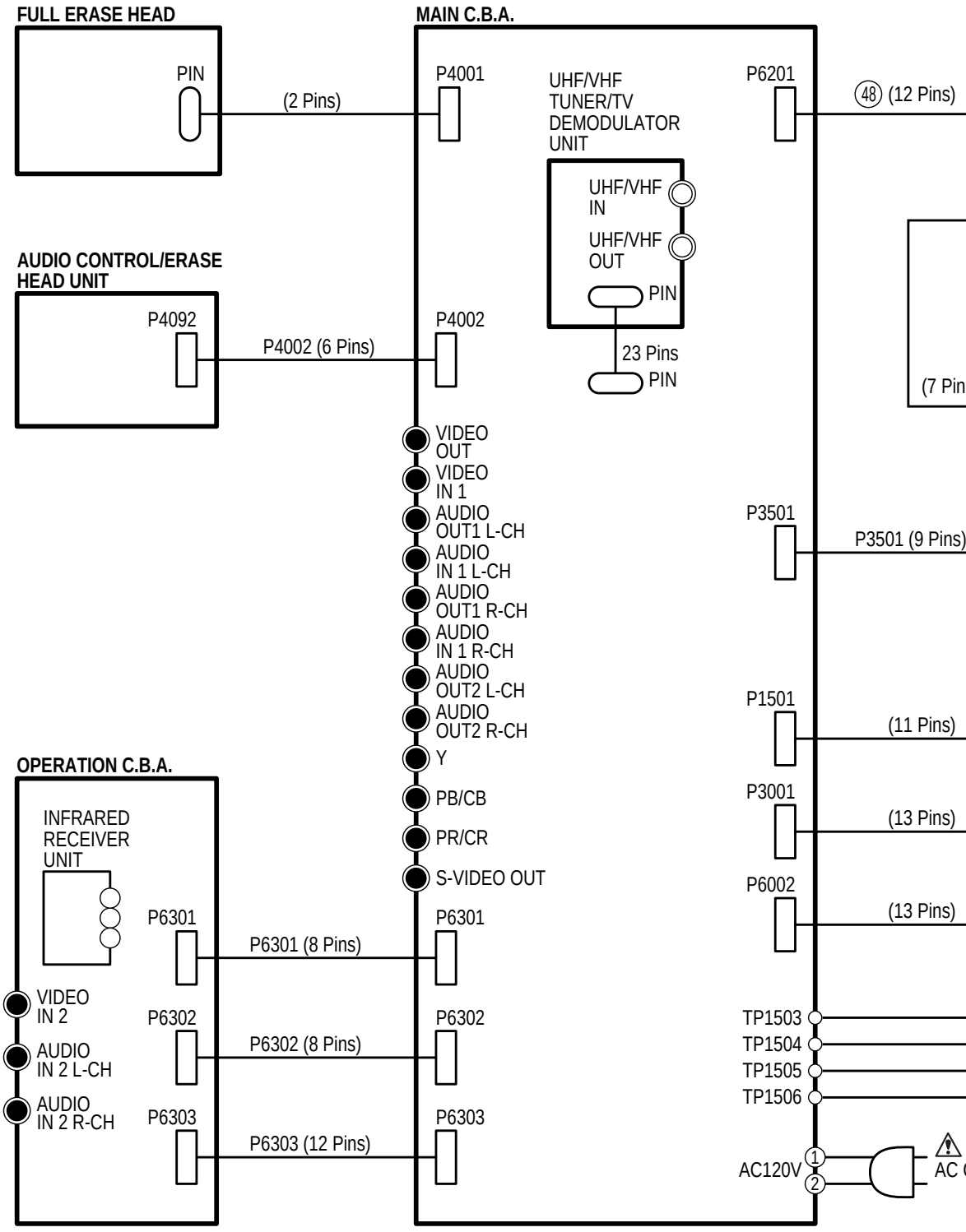
LINK TO VOLTAGE CHART

LSJB2007
PV-D4742
DVD DECODER IV SCHEMATIC DIAGRAM

7.5. INTERCONNECTION SCHEMATIC DIAGRAM

INTERCONNECTION SCHEMATIC DIAGRAM

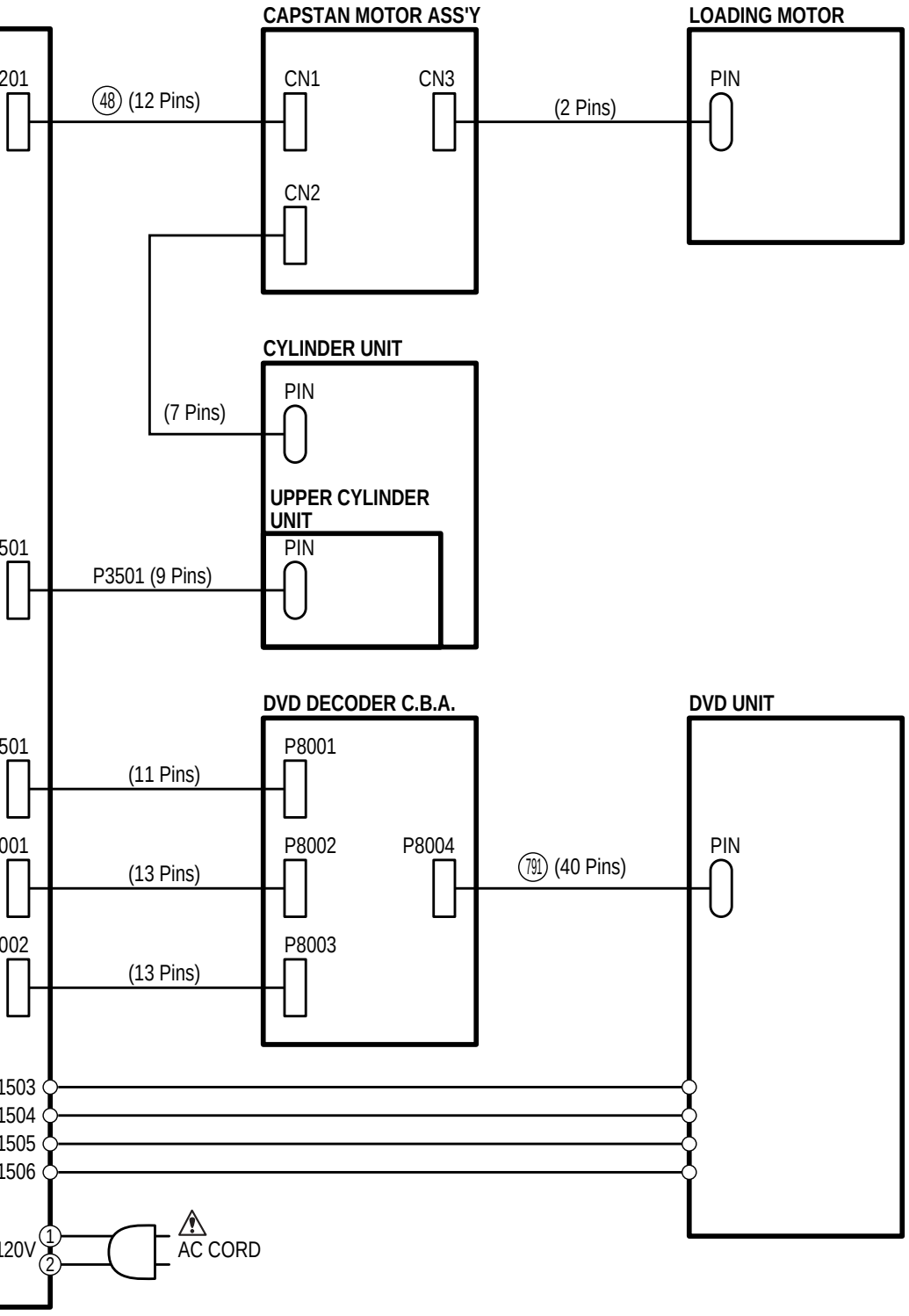
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.



TICE:
ED BY THE SIGN ⚠ HAVE
TICS IMPORTANT FOR SAFETY.
OF THESE COMPONENTS,
ED PARTS.

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.



PV-D4742
INTERCONNECTION SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

MAIN C.B.A. (POWER SUPPLY/VIDEO/AUDIO SECTION)

MODE / PIN NO.	STOP
IC1001	
1	5.2
2	4.2
3	0.6
4	2.0
IC1002	
1	2.6
2	0
3	4.2
IC1003	
1	0
2	5.2
3	15.3
4	15.3
5	27.9
IC1501	
1	162.0
2	8.2
3	0
4	20.5
5	9.6
IC1502	
1	4.3
2	4.1
3	14.3
4	20.7
IC1503	
1	2.5
2	0
3	4.1
IC1504	
1	0
2	4.7
3	12.0
4	12.0
5	13.7
IC3001	
1	5.0
2	2.0
3	2.6
4	2.3
5	2.0
6	2.5
7	2.0
8	0
9	1.9
10	1.9
11	2.0
12	2.4
13	2.0
14	2.6
15	2.0
16	2.5
17	0
18	4.6

MODE / PIN NO.	STOP
19	2.1
20	3.5
21	2.8
22	0
23	3.4
24	2.6
25	2.6
26	2.6
27	5.0
28	0.1
29	4.1
30	5.1
31	1.8
32	0
33	4.9
34	---
35	1.9
36	5.0
37	2.6
38	2.6
39	2.6
40	2.6
41	0
42	2.6
43	2.6
44	2.6
45	2.6
46	5.0
47	5.0
48	0.1
49	0.1
50	0.4
51	2.6
52	2.5
53	0.3
54	5.0
55	2.6
56	2.6
57	2.6
58	0.2
59	0.2
60	0
61	0.2
62	0.2
63	2.6
64	5.2
65	0.3
66	0
67	2.6
68	2.6
69	0.2
70	0
71	0.2
72	0.2
73	0

MODE / PIN NO.	STOP
74	0.2
75	0.2
76	0.3
78	0.3
79	0.3
80	0.4
81	0.3
82	0.3
83	0.4
84	0.4
85	0.4
86	---
87	0.4
88	4.9
89	0.4
90	0.4
91	0.4
92	0.4
93	0.3
94	0.3
95	0.9
96	0.4
97	2.3
98	3.1
99	0.4
100	0.4
IC3002	
1	3.2
2	2.2
3	2.2
4	2.2
5	2.2
6	0
7	0
8	0
9	12.0
10	12.0
11	12.0
12	0.9
13	3.2
14	3.2
15	3.2
16	12.0
IC3101	
1	2.7
2	5.0
3	0
4	2.7
5	3.0
6	2.6
7	2.2
8	3.0
IC4201	
1	0.4
2	0

MODE / PIN NO.	STOP
3	2.5
4	0
5	2.5
6	2.5
7	2.2
8	0.4
9	0
10	0
11	0
12	2.2
13	2.6
14	0
15	0
16	2.6
17	0.8
18	2.6
19	2.5
20	2.1
21	2.1
22	2.1
23	0
24	2.1
25	5.0
26	2.1
27	0
28	3.8
29	1.5
30	0.8
31	0.1
32	2.5
33	2.5
34	0.7
35	2.5
36	0.1
37	1.7
38	0
39	---
40	5.0
41	0
42	4.9
43	4.9
44	0
45	0
46	0
47	2.5
48	2.3
49	0.4
50	3.6
51	5.0
52	3.6
53	6.0
54	2.5
55	0
56	0
57	6.0

MODE / PIN NO.	STOP
58	12.0
59	0.2
60	0.2
61	2.5
62	2.5
63	2.8
64	0.6
IC4303	
1	7.7
2	7.7
3	7.6
4	0
5	7.7
6	7.7
7	7.7
8	15.3
IC4304	
1	---
2	---
3	7.7
4	7.6
5	7.7
6	0
7	0
8	0
9	15.3
10	15.3
11	15.3
12	7.7
13	7.7
14	7.7
15	---
16	15.3
Q1001	
E	0
C	157.9
B	0.3
Q1002	
E	0
C	0.3
B	0.6
Q1051	
E	12.0
C	14.0
B	12.5
Q1052	
E	0
C	12.5
B	0.7
Q1053	
E	5.0
C	5.0
B	6.0

MODE / PIN NO.	STOP
Q1501	
E	0
C	0
B	0.7
Q1502	
S1	5.0
S2	5.0
S3	5.0
G	
D1	5.0
D2	5.0
D3	5.0
D4	5.0
Q3001	
E	3.9
C	0
B	3.2
Q3002	
E	2.7
C	0
B	2.0
Q3003	
E	2.0
C	5.0
B	2.7
Q3004	
E	3.2
C	11.2
B	3.8
Q3005	
E	12.0
C	5.6
B	11.2
Q3007	
E	3.1
C	11.2
B	3.8
Q3008	
E	12.0
C	5.0
B	11.2
Q3009	
E	5.1
C	12.0
B	5.8
Q3011	
E	0
C	12.0
B	0
Q3601	
E	3.1
C	11.3
B	3.7
Q3602	
E	3.1

MODE / PIN NO.	STOP
C	11.3
B	3.8
Q3603	
E	3.1
C	11.3
B	3.7
Q3604	
E	12.0
C	5.6
B	11.3
Q3605	
E	12.0
C	5.5
B	11.3
Q3606	
E	12.0
C	5.5
B	11.3
Q3610	
E	0.2
C	0
B	2.2
Q3611	
E	0
C	0
B	2.3
Q3612	
E	4.4
C	0
B	3.8
Q3613	
E	4.5
C	0
B	3.8
Q3614	
E	4.4
C	0
B	3.8
Q3875	
E	2.7
C	0
B	2.0
Q4001	
E	5.0
C	5.2
B	4.5
Q4002	
E	0
C	0
B	0.8
Q4003	
E	0
C	0
B	0.8

MODE / PIN NO.	STOP
Q4004	
E	0
C	-1.5
B	0
Q4005	
E	0
C	0
B	-1.2
Q4006	
E	0
C	0
B	-1.1
Q4007	
E	0
C	0.1
B	-2.1
Q4008	
E	0
C	0
B	-3.3
Q4101	
E	0
C	0
B	0
Q4304	
E	0
C	15.3
B	0
Q4305	
E	7.7
C	15.7
B	8.3
TP1001	0
TP1002	33.0
TP1003	15.1
TP1005	5.0
TP1006	5.0
TP1007	0
TP1008	15.7
TP1009	0
TP1050	5.0
TP1058	12.0
TP1080	27.9
TP3001	3.9
TP3002	2.8
TP3003	2.0
TP3004	3.4
TP3005	0.1
TP3006	2.5

MODE / PIN NO.	STOP
TP3007	2.0
TP3008	3.4
TP3009	0
TP3010	5.0
TP3011	0.4
TP3101	2.7
TP3102	3.0
TP3103	1.9
TP3151	2.3
TP3401	0
TP3601	3.6
TP3602	3.7
TP3603	3.7
TP3604	3.7
TP3605	0
TP3606	0
TP3801	0.1
TP3802	5.2
TP3803	0.1
TP3804	0.1
TP3805	0.1
TP3806	0.1
TP3807	0.4
TP4002	0
TP4011	0
TP4101	0
TP4102	0
TP4103	0
TP4201	0
TP4202	0
TP4203	0
TP4204	0
TP4205	1.5
TP4206	3.8
TP4207	0.8
TP4208	0.4
TP4209	0
TP4210	0

VOLTAGE CHART
PV-D4742

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

MAIN C.B.A. (SYSTEM CONTROL/SERVO SECTION)

MODE / PIN NO.	REC	PLAY
IC6001		
1	5.2	5.2
2	0.1	0.1
3	5.2	5.3
4	0.3	0.3
5	5.2	5.2
6	---	---
7	2.6	2.6
8	0.3	5.2
9	0	0
10	5.2	5.2
11	5.1	5.1
12	0.1	0.1
13	5.1	5.1
14	5.3	5.3
15	0.1	0.2
16	0.1	0.1
17	4.9	4.9
18	4.9	4.9
19	---	---
20	0.2	5.2
21	5.2	5.2
22	0	0
23	2.6	0
24	0.1	0.1
25	0.2	5.2
26	0	0
27	0.1	0
28	5.2	0.1
29	1.5	3.7
30	0	0
31	1.9	2.4
32	5.3	5.3
33	0	0
34	2.7	2.7
35	2.7	2.7
36	5.2	0
37	2.4	2.4
38	2.4	2.4
39	0	0
40	0	0
41	4.8	4.8
42	0	0
43	4.8	0
44	-0.3	0
45	0	0
46	0	0
47	0.1	0
48	0	0
49	0	0
50	0.4	0
51	5.0	5.0
52	2.7	2.7
53	2.7	2.6
54	5.0	5.0

MODE / PIN NO.	REC	PLAY
55	4.6	4.6
56	0.1	0
57	0.1	0.1
58	0.1	0
59	0.1	0
60	0.3	2.3
61	0.1	0.1
62	0	0
63	0	0
64	5.3	5.3
65	1.4	1.4
66	---	---
67	0.1	2.4
68	2.2	2.2
69	---	---
70	0	0
71	0	0
72	0	0
73	5.0	5.0
74	3.0	2.6
75	2.2	0
76	2.6	2.6
77	5.2	5.2
78	5.3	5.3
79	5.2	5.2
80	5.2	5.2
81	5.2	0
82	0	0
83	0.1	0.1
84	0.1	0.1
85	3.5	2.9
86	5.3	5.3
87	5.3	5.3
88	5.3	5.3
89	5.3	5.3
90	0.1	0.1
91	5.2	5.2
92	0.1	0
93	5.2	5.2
94	5.2	5.2
95	0.3	0
96	0.1	0
97	0	0
98	0.1	0
99	0	0
100	4.9	4.9
IC6002		
A	1.2	1.2
K	0	0
E	0	0
C	5.3	5.3
IC6003		
A	2.4	2.4
K	1.2	1.2
E	0	0

MODE / PIN NO.	REC	PLAY
C	0.2	0.2
IC6004		
1	0	0
2	5.0	5.0
3	0	0
IC6005		
1	0	0
2	0	0
3	0	0
4	0	0
5	4.9	4.9
6	4.9	4.9
7	0	0
8	5.0	5.0
Q6001		
E	0	0
C	5.2	5.2
B	0	0
Q6002		
E	12.0	12.0
C	12.0	12.0
B	12.0	12.0
Q6003		
E	4.6	0
C	12.0	12.0
B	5.2	0
Q6005		
E	5.0	5.0
C	5.0	5.0
B	4.5	4.5
Q6006		
E	0	0
C	0.1	0.1
B	0.8	0.8
Q6009		
E	0	0
C	5.2	5.2
Q6010		
E	0	0
C	5.2	5.2
TP6001	5.2	5.3
TP6002	2.6	0.2
TP6003	3.5	2.9
TP6004	5.4	5.2
TP6005	5.2	5.2
TP6007	0	0
TP6008	0	0
TP6009	5.0	5.0
TP6010	4.9	4.9
TP6011	4.9	4.9
TP6014	0.1	0.1
TP6017	0	0
TP6018	5.3	5.3

MODE / PIN NO.	REC	PLAY
TP6019	0	0
TP6101	0.1	0.1
TP6102	5.2	5.2
TP6103	5.3	5.3
TP6104	0.1	0.1
TP6105	0.2	5.2
TP6106	5.2	5.2
TP6107	0	0
TP6201	2.7	2.7
TP6202	2.7	2.7
TP6203	2.4	2.4
TP6204	1.4	1.4
TP6205	2.6	2.6
TP6206	3.0	2.6
TP6207	2.6	2.6
TP6208	2.6	2.6
TP6209	2.7	2.7
TP6210	5.2	0

OPERATION C.B.A.

MODE / PIN NO.	REC	PLAY
IC6301		
1	0	0
2	5.1	5.1
3	5.1	5.1
4	5.0	0
5	---	---
6	0.1	4.5
7	4.6	4.5
8	0	0
9	0	4.5
10	---	---
11	4.7	4.5
12	3.2	3.1
13	0	2.8
14	3.1	3.2
15	0	2.6
16	2.9	0.3
17	2.8	2.6
18	3.0	3.0
19	0	0
20	3.6	2.8
21	3.6	2.9
22	2.9	3.0
23	2.3	2.2
24	2.7	2.7
25	0.1	0.1
26	---	---
27	0	1.4
28	5.0	5.0
Q6301		
E1	4.7	4.6
C1	1.7	1.3
B1	4.8	4.6
E2	4.7	4.6
C2	2.2	1.4
B2	4.7	4.6
Q6302		
E1	4.7	4.5
C1	1.9	-2.7
B1	4.7	4.6
E2	4.7	4.5
C2	1.7	---
B2	4.8	4.6
Q6303		
E	5.0	5.0
C	0.2	1.2
B	5.0	4.9
Q6304		
E	0	0
C	0.1	0.1
B	0.8	0.7
Q6305		
E	0	0
C	0.1	5.1

MODE / PIN NO.	REC	PLAY
B	0.8	0.6
Q6306		
E	0	0
C	5.6	6.9
B	0	0.1
Q6307		
E	0	0
C	7.5	7.1
B	0	0
TP6301	0	0
TP6302	5.0	5.0
TP6303	5.3	5.3
TP6304	0	0
TP6305	5.3	5.3
TP6306	0	0

VOLTAGE CHART
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NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

DVD DECODER C.B.A.

MODE / PIN NO.	STOP
IC8000	
1	3.6
2	1.5
3	1.3
4	1.2
5	1.4
6	1.2
7	1.4
8	0
9	3.6
10	1.9
11	1.3
12	0.3
13	0.2
14	1.2
15	1.7
16	1.7
17	0
18	3.6
19	1.0
20	0.2
21	1.2
22	0
23	0
24	3.6
25	0.1
26	0
27	3.6
28	2.8
29	2.6
30	2.7
31	0.1
32	0.1
33	1.9
34	0
35	3.6
36	0.4
37	0.4
38	0.4
39	0.4
40	0.4
41	0.4
42	0.4
43	0
44	3.6
45	0.4
46	0.4
47	0.4
48	0.3
49	0.5
50	---
51	3.6
52	0
53	0.5
54	0.5

MODE / PIN NO.	STOP
55	0.5
56	0.5
57	0.5
58	0.5
59	3.6
60	0
61	0.5
62	0.5
63	0.5
64	0.5
65	0.4
66	0.4
67	0
68	3.6
69	0.5
70	0.5
71	0.5
72	0.5
73	0.5
74	0.5
75	3.6
76	0
77	0.4
78	0.4
79	0.4
80	0.4
81	0.4
82	0.4
83	3.6
84	0
85	0.4
86	0.4
87	0.4
88	0.4
89	0.4
90	0.4
91	0
92	3.6
93	0.3
94	0.3
95	0.3
96	0.3
97	0.4
98	0
99	3.6
100	0.4
101	0.4
102	0.4
103	0
104	3.6
105	0.4
106	0.4
107	0.4
108	0.4
109	0.4

MODE / PIN NO.	STOP
110	0.4
111	3.6
112	0
113	0.4
114	0.3
115	0.3
116	0.5
117	0.4
118	0.3
119	0.3
120	0
121	3.6
122	0.4
123	0.4
124	0.4
125	0.4
126	0.4
127	0.4
128	0.4
129	0
130	3.6
131	0.4
132	0.8
133	0.4
134	0.4
135	0.4
136	0.4
137	0.4
138	0
139	3.6
140	0.4
141	0.4
142	0.3
143	0.3
144	0.2
145	0.3
146	0.5
147	0
148	3.6
149	0.4
150	0.4
151	0.4
152	0.8
153	0.3
154	0.4
155	0.4
156	0
157	3.6
158	0.4
159	5.0
160	0.4
161	0.4
162	0.4
163	0
164	3.6

MODE / PIN NO.	STOP
165	0.4
166	1.2
167	0.4
168	1.1
169	0.4
170	0.3
171	0
172	3.6
173	---
174	0.3
175	0.3
176	0
177	0
178	0.4
179	0.4
180	0.4
181	0.4
182	0.4
183	3.6
184	0
185	0.4
186	0.4
187	0.4
188	0.4
189	0.4
190	0.4
191	0.4
192	0
193	3.6
194	0.4
195	0.4
196	0.4
197	0.4
198	0.3
199	---
200	0
201	3.6
202	---
203	---
204	0.3
205	0.3
206	0.4
207	0.4
208	0
IC8001	
1	0
2	0
3	0
4	0
5	0.4
6	0.4
7	0
8	5.0
IC8002	
1	0

MODE / PIN NO.	STOP
2	0.4
3	0.4
4	0.4
5	0.3
6	0.3
7	0.4
8	0.4
9	0.3
10	0
11	0.3
12	0.3
13	0.4
14	0.4
15	0.3
16	0.3
17	0.4
18	0.4
19	---
20	5.0
IC8003	
1	0
2	3.6
3	0.5
4	0.5
5	0
IC8100	
1	3.6
2	0.7
3	3.6
4	0.6
5	0.9
6	0
7	1.0
8	1.2
9	3.6
10	0.9
11	0.9
12	0
13	1.2
14	3.6
15	0
16	3.5
17	3.5
18	3.5
19	0
20	0.1
21	0
22	0.1
23	1.3
24	1.2
25	1.0
26	1.9
27	3.6
28	0
29	0.1

MODE / PIN NO.	STOP
30	1.6
31	1.5
32	1.0
33	1.0
34	0.2
35	3.2
36	---
37	3.6
38	1.5
39	0
40	---
41	0
42	0.8
43	3.6
44	0.8
45	0.9
46	0
47	0.5
48	0.5
49	3.6
50	0.8
51	0.9
52	0
53	1.3
54	0
IC8200	
1	0.4
2	0.3
3	0.3
4	0.3
5	0
6	0
7	0
8	0
9	0
10	0
11	0.4
12	0
13	0.3
14	0.4
15	0.3
16	0.3
17	0.4
18	0.4
19	0.3
20	0.4
21	0.5
22	0.4
23	0.4
24	0.4
25	0.2
26	0
27	0
28	0.4
29	0

MODE / PIN NO.	STOP
30	0.4
31	0
32	0.3
33	0.1
34	0
35	0
36	0.3
37	0.3
38	0.3
39	0.3
40	0.3
41	0.3
42	0.4
43	0
44	0.4
IC8201	
1	0
2	5.1
3	3.7
IC8301	
1	2.2
2	2.5
3	0.1
4	0.6
5	0.1
6	0.6
7	0.6
8	0.6
9	---
10	---
11	0.6
12	0.1
13	---
14	---
15	0.4
16	0.6
17	0.1
18	0.1
19	0.1
20	0
21	0
22	0
23	0
24	0.1
25	0.9
26	3.6
27	0
28	3.6
29	0.9
30	---
31	0.8
32	---
33	1.0
34	---
35	0.9

MODE / PIN NO.	STOP
36	---
37	3.6
38	0.9
39	---
40	0.2
41	---
42	0.9
43	---
44	0
45	0
46	0
47	0
48	0
IC8401	
1	6.1
2	6.1
3	6.1
4	0
5	6.1
6	6.1
7	6.1
8	12.2
IC8403	
1	0.4
2	0.4
3	5.0
4	---
5	---
6	0.3
7	0.3
8	0.3
9	0.3
10	0.3
11	0.1
12	0
13	5.0
14	0
15	0.3
16	0.4
17	0.4
18	0.4
19	---
20	---
21	5.0
22	0
23	0
24	0
IC8502	
1	0
2	0.3
3	0.5
4	0
5	0.3
6	0.5
7	0

MODE / PIN NO.	STOP
8	---
9	0
10	0
11	0.4
12	0.3
13	0
14	3.6
Q8000	
E	0.7
C	0.7
B	0.5
Q8003	
E	0
C	0
B	4.0
Q8200	
E	0.1
C	0
B	0.5
Q8201	
E	0.3
C	0
B	0.2
Q8202	
E	0.3
C	0
B	0.5
Q8204	
E	0
C	0
B	0.1
Q8205	
E	0.1
C	0
B	0.4
Q8206	
E	0
C	0
B	0
Q8207	
E	1.9
C	0
B	0.6
Q8208	
E	1.6
C	0
B	0.9
TP8000	0.4
TP8001	0.1
TP8002	3.6
TP8003	0.4
TP8004	0.4
TP8005	0.3

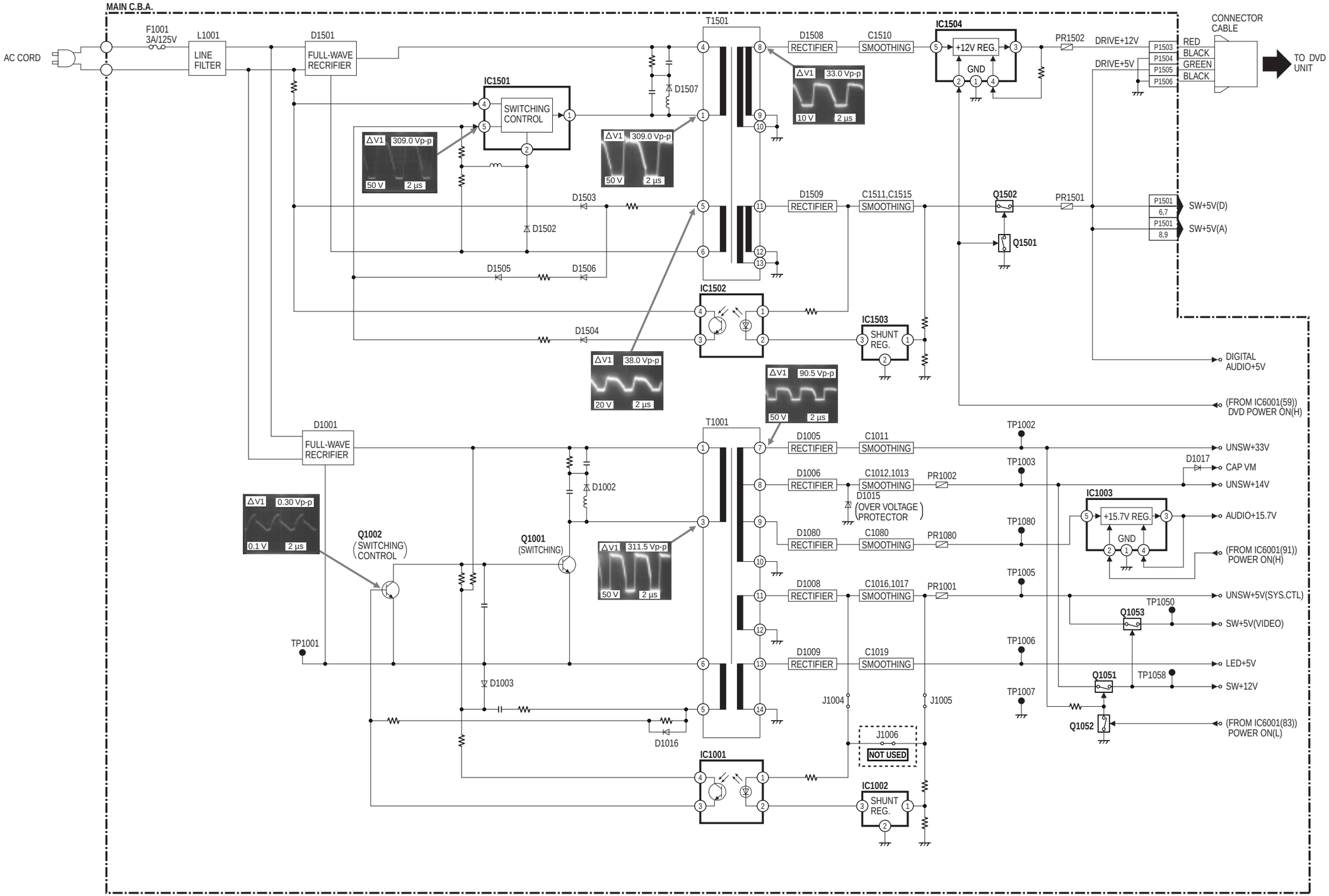
MODE / PIN NO.	STOP
TP8006	0.5
TP8007	0.1
TP8008	0.2
TP8009	0.3
TP8010	0.2
TP8011	0.2
TP8012	5.0
TP8013	0.7
TP8014	0
TP8015	0.4
TP8016	0
TP8017	0
TP8018	0.4
TP8019	4.4
TP8020	0.4
TP8021	0
TP8022	5.0
TP8023	0.1
TP8024	0
TP8025	0.2
TP8026	0.4
TP8027	0.1
TP8028	0
TP8029	0
TP8030	0.4
TP8031	0.3
TP8032	0.3
TP8033	0.3
TP8034	0.4
TP8035	0.4
TP8036	0.4
TP8037	0.1
TP8038	0
TP8039	0.1
TP8040	0.4
TP8041	0.4
TP8042	0.4
TP8043	0
TP8044	0.4
TP8045	0
TP8046	0.1
TP8047	0
TP8048	0
TP8049	0
TP8051	5.0
TP8052	0.4
TP8053	0.1
TP8054	0.1
TP8055	0.3
TP8056	0.1
TP8057	0.1
TP8058	0.1
TP8059	0.1
TP8060	0.1
TP8061	0.1

MODE / PIN NO.	STOP
TP8062	0.4
TP8063	0.4
TP8065	0.1
TP8068	0.5
TP8069	0
TP8070	0.1
TP8071	0.1
TP8072	0.1
TP8100	3.6
TP8200	0.6
TP8201	0
TP8202	0.5
TP8203	0
TP8204	0.1
TP8205	0.4
TP8206	0.1
TP8207	0.1
TP8208	0.1
TP8209	0
TP8210	0.4
TP8211	0.4
TP8212	0.4
TP8213	0.4
TP8214	0.1
TP8215	0.1
TP8216	0.1
TP8300	0
TP8301	3.6
TP8302	0.4
TP8303	0.3
TP8304	0.4
TP8305	0.4
TP8306	0.4
TP8307	0.4
TP8308	0.4
TP8309	0.4
TP8310	0.4
TP8311	0.1
TP8312	0.3
TP8313	0.3
TP8315	0.1
TP8316	0
TP8317	0
TP8318	0.1
TP8319	0
TP8320	0
TP8321	0.5
TP8322	0
TP8323	0.5
TP8324	0.5
TP8325	0.1
TP8326	0
TP8327	0.1
TP8328	0
TP8329	0.4

MODE / PIN NO.	STOP
TP8330	0.1
TP8331	0.1
TP8332	0
TP8334	0
TP8335	0
TP8398	0.5
TP8399	0.5
TP8400	0.1
TP8401	0.1
TP8405	0
TP8407	0
TP8408	0.1
TP8415	0.3
TP8416	0.2
TP8417	0
TP8418	0
TP8419	0
TP8420	0
TP8421	0.4
TP8422	0.4
TP8423	0
TP8424	0
TP8501	0.3
TP8502	0.1
TP8503	0.1
TP8504	0.4
TP8505	0.1
TP8506	0.3

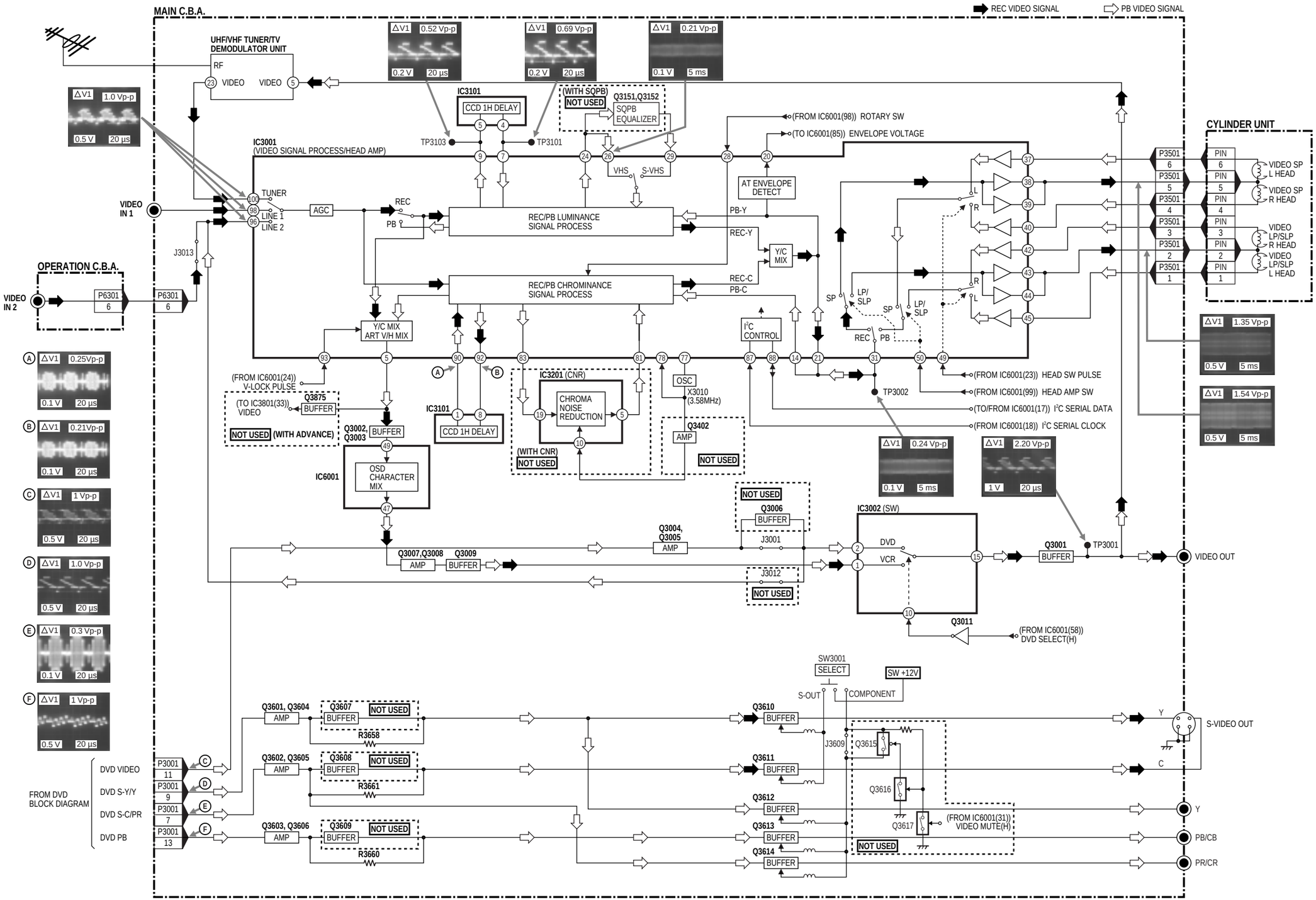
VOLTAGE CHART
PV-D4742

POWER SUPPLY BLOCK DIAGRAM



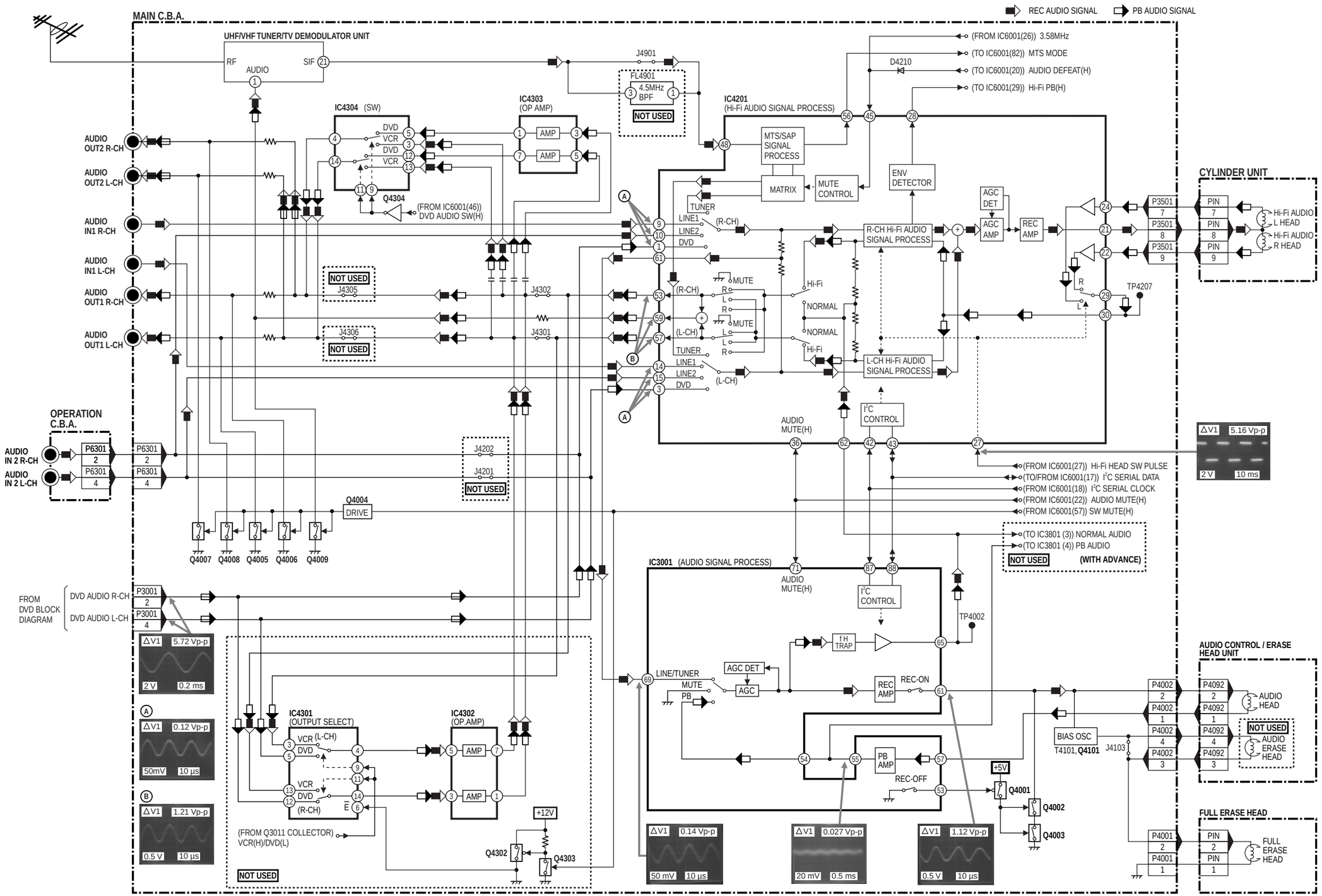
POWER SUPPLY BLOCK DIAGRAM
PV-D4742

VIDEO SIGNAL PATH BLOCK DIAGRAM



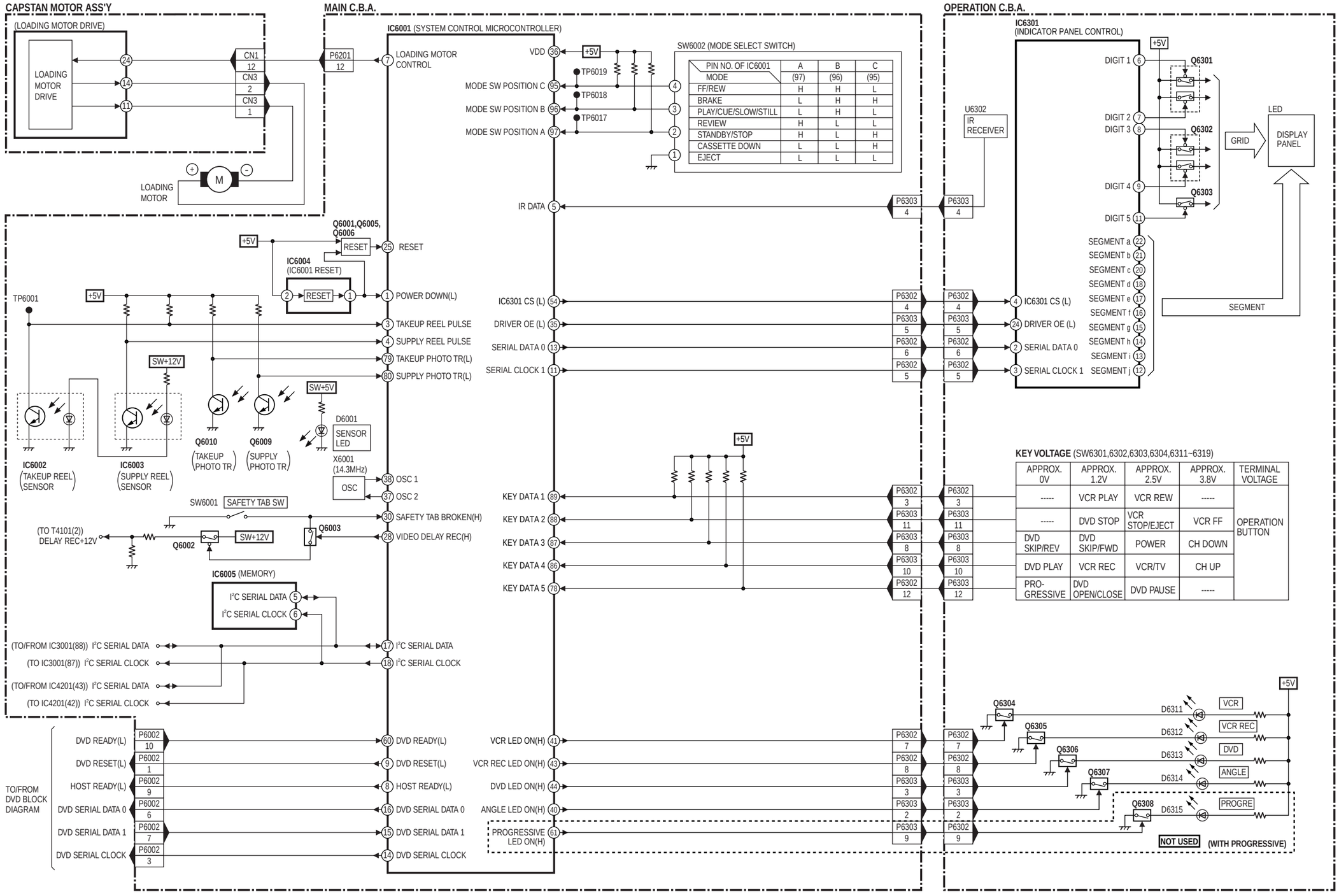
VIDEO SIGNAL PATH BLOCK DIAGRAM
PV-D4742

AUDIO SIGNAL PATH BLOCK DIAGRAM



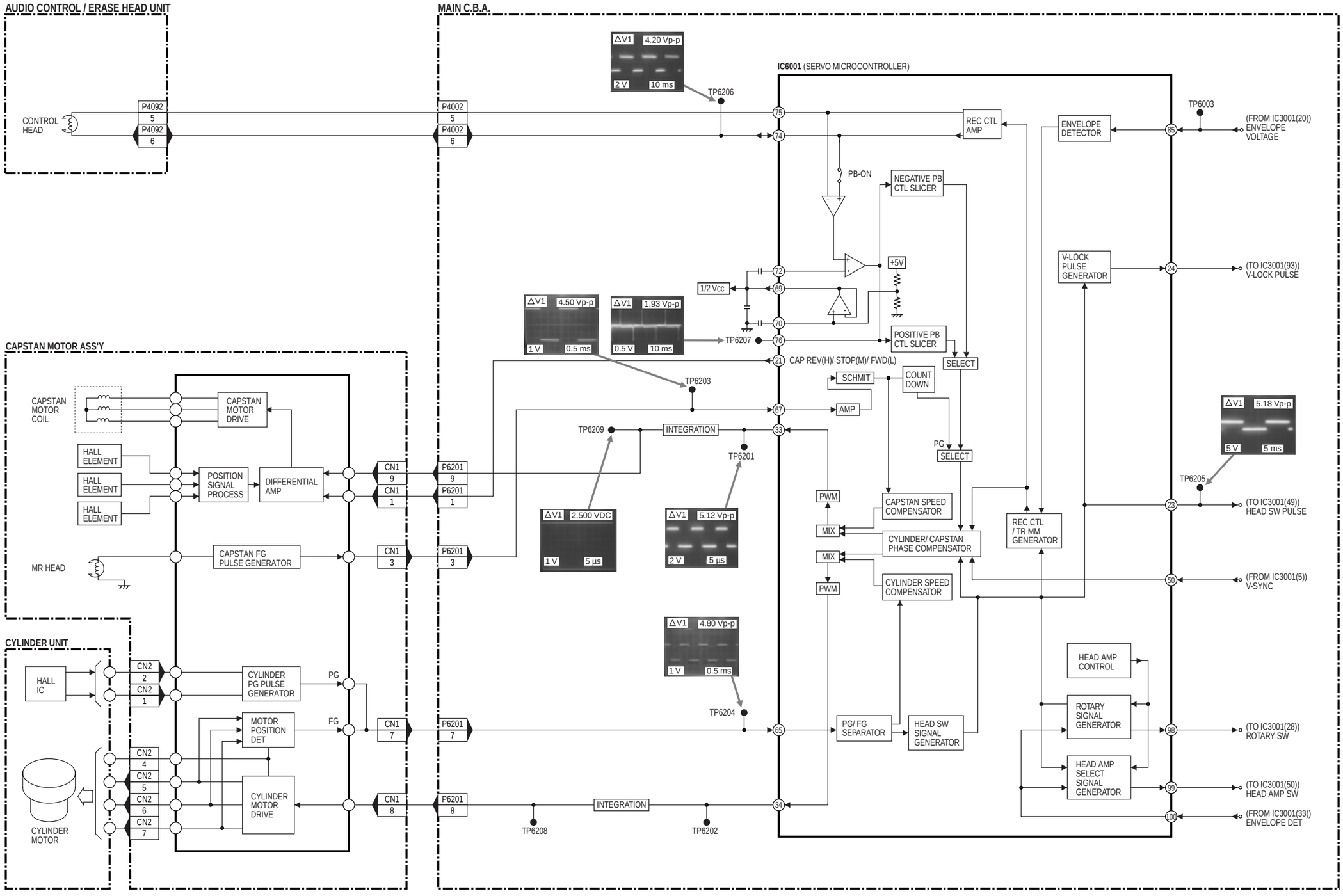
AUDIO SIGNAL PATH BLOCK DIAGRAM
PV-D4742

SYSTEM CONTROL BLOCK DIAGRAM



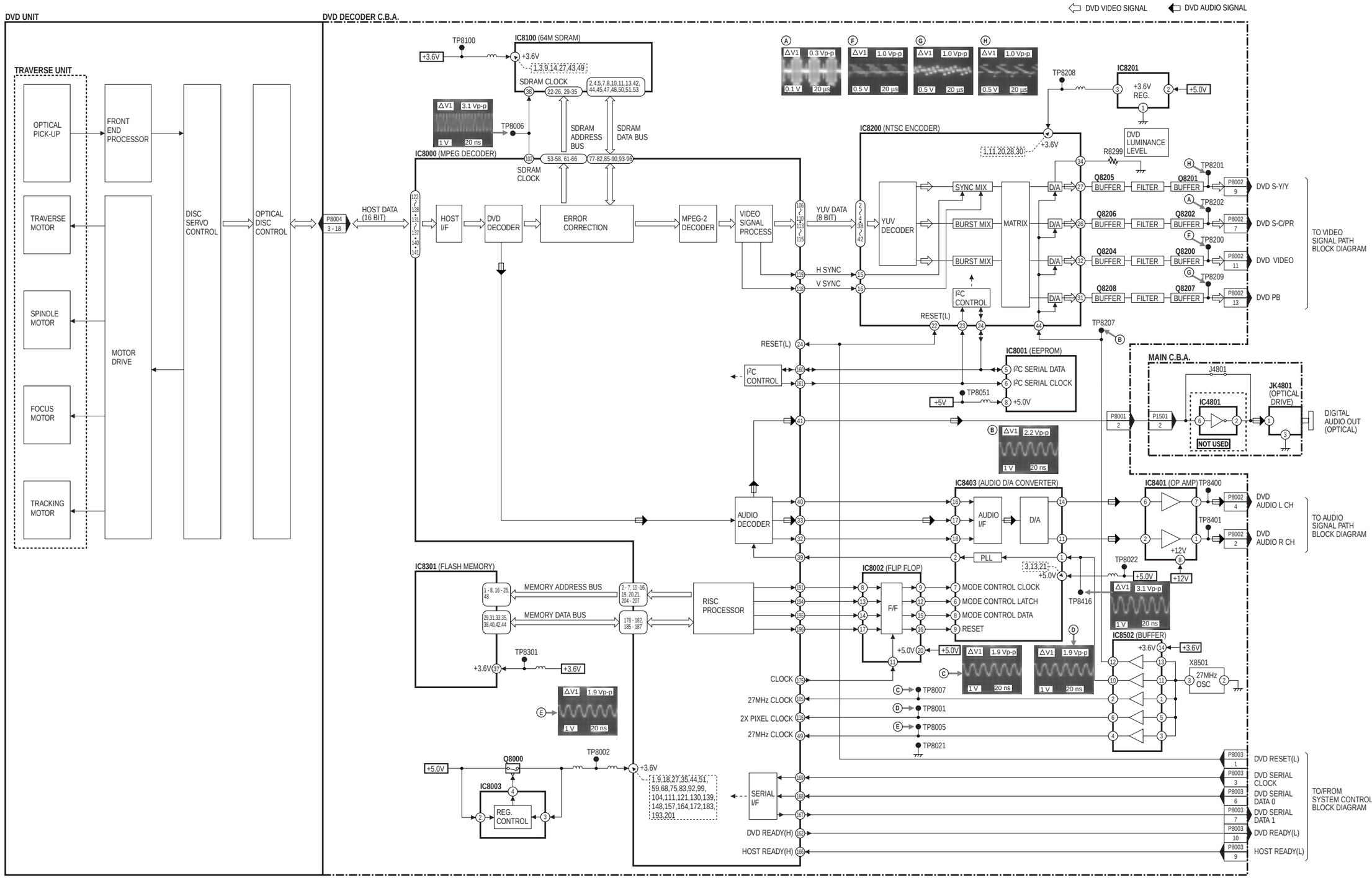
SYSTEM CONTROL BLOCK DIAGRAM
PV-D4742

SERVO BLOCK DIAGRAM



SERVO BLOCK DIAGRAM
PV-D4742

DVD BLOCK DIAGRAM



DVD BLOCK DIAGRAM
PV-D4742

Troubleshooting Hints

How to confirm which of DVD circuit or other circuits is defective.

1) Confirm DVD operation and VCR operation

1. Playback the VHS tape.
2. Playback the DVD disk.

→ Both NG → Main C.B.A. is defective. Repair Main C.B.A.

→ No PB VCR only → Main C.B.A. is defective. Repair Main C.B.A.

→ No PB DVD only → DVD circuit is defective. Then, perform troubleshooting refering the "How to confirm which of DVD Unit or DVD Decoder C.B.A. is defective."

How to confirm which of DVD Unit or DVD Decoder C.B.A. is defective.

NOTE:
Host communication may not be done correctly between IC6001 on the Main C.B.A. and IC8000 on the DVD Decoder C.B.A. when there is a problem on the DVD Decoder C.B.A.
In that case, the unit is automatically switched to VCR mode after approx. 30 seconds even in DVD mode becouse the DVD Decoder C.B.A. is shut down. (Check the VCR mode indicator and DVD mode indicator on the Multi Function Display.)
Check the voltage during 30 seconds which the unit can be remained in DVD mode.

First confirm that other C.B.A. are checked O.K. other than DVD Unit and DVD Decoder C.B.A.
Check points: 1. All Power Supply Voltages for DVD circuit.
(P1501 pin 6, 7, 8, 9, P1503, P1505 on Main C.B.A.)
2. Output signal from DVD Decoder C.B.A.
(P3001 pin7, 9, 11, 13 on Main C.B.A.)

↓

Check the connections between the DVD Decoder C.B.A. to Main C.B.A. and Power Supply C.B.A.

↓

Check the connector cable (IDE cable) and the connector cable (Power) from the DVD unit.

↓

Set the unit to DVD mode.

→ The unit is automatically switched to VCR mode after approx. 30 seconds even in DVD mode. → DVD Decoder C.B.A. is defective. Then, perform troubleshooting refering the "Troubleshooting Hints of DVD Decoder C.B.A."

↓ OK

Perform the self diagnostic test function. Refer to "SELF DIAGNOSTIC TEST FUNCTION FOR DVD UNIT."

→ Error Code (10, 20, 30, 40, 50, 60, 70) is appears. → DVD Unit is defective. Replace DVD Unit.

↓ Error Code (00) is appears.

Playback the test/normal DVD disk.

→ If the Message "PLEASE CHECK THE DISK, AND FOR STAINS OR SCRATCHES ON DISK" appears. → DVD Unit is defective. Replace DVD Unit.

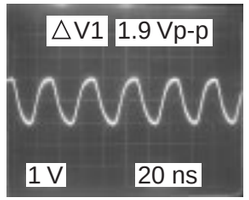
→ If there is problem of audio or picture, even when it can playback. → DVD Decoder C.B.A. is defective. Replace DVD Decoder C.B.A.

Troubleshooting Hints of DVD Decoder C.B.A.

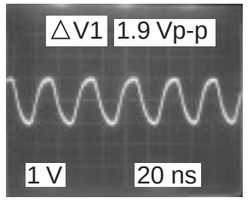
Cause: Decoder Problem

Check voltage at TP8002 on the DVD Decoder C.B.A. Is it +3.6V ?
→ NG → Check IC8003. (REGULATOR CONTROL) → NG → Replace IC8003. (REGULATOR CONTROL)
↓ OK
Check Power line.

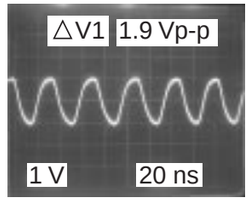
Check signal at TP8005, TP8007 and TP8001 on the DVD Decoder C.B.A.(27 MHz clock)
→ NG → Check X8501. → NG → Replace X8501.
↓ OK
Replace IC8502. (BUFFER)



TP8005



TP8007



TP8001

Cause: SDRAM Problem

Check voltage at TP8100 on the DVD Decoder C.B.A. Is it +3.6V ?
→ NG → Check Power line.
↓ OK
Check signal at TP8006 on the DVD Decoder C.B.A. (108 MHz clock)
→ NG → Replace IC8000. (NTSC DECODER)
↓ OK
Replace IC8100. (64M SDRAM)

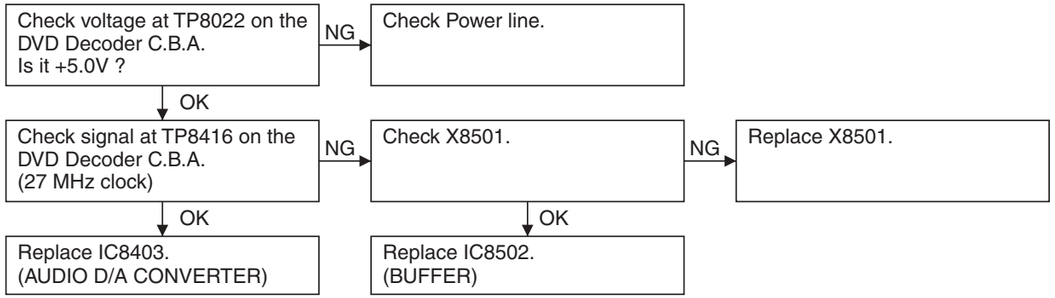
Cause: NTSC Encoder Problem

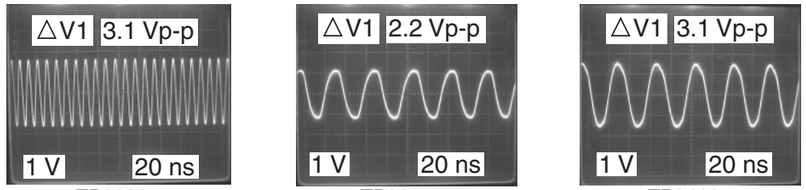
Check voltage at TP8208 on the DVD Decoder C.B.A. Is it +3.6V ?
→ NG → Check IC8201. (REGULATOR CONTROL) → NG → Replace IC8201. (REGULATOR CONTROL)
↓ OK
Check Power line.

Check signal at TP8207 on the DVD Decoder C.B.A. (27 MHz clock)
→ NG → Check X8501. → NG → Replace X8501.
↓ OK
Replace IC8200. (NTSC ENCODER)

Replace IC8502. (BUFFER)

Cause: Audio DAC Problem



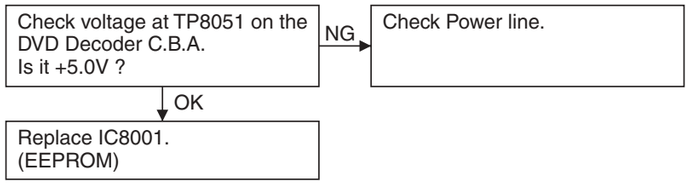


TP8006

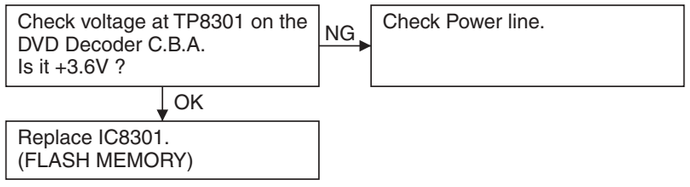
TP8207

TP8416

Cause: EEPROM Problem

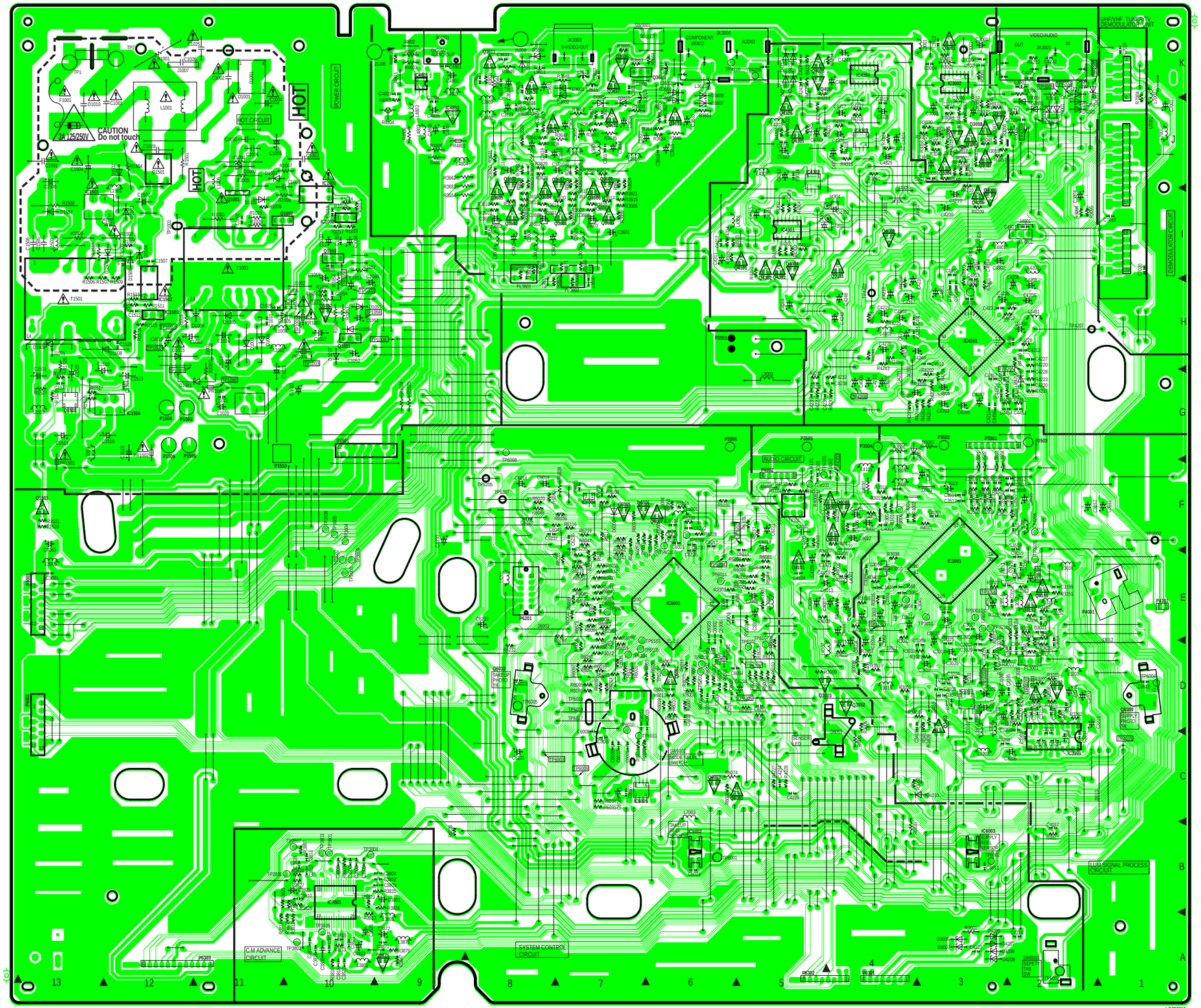


Cause: Flash ROM Problem



MAIN C.B.A. LSEP2015HA

HOT CIRCUIT. BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.



NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE:
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS.
FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING,
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE 3A 125V/250V FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES
D' INCENDIE N' UTILISERQUE DES FUSIBLE DE MÊME
TYPE 3A 125V/250V

3A 125V/250V

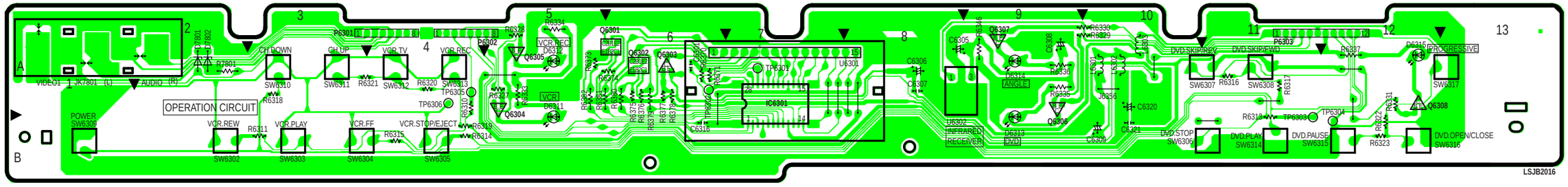
MAIN C.B.A. LSEP2015HA
PV-D4742

OPERATION C.B.A. LSEP2016A

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE:
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS.
FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING,
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.



DVD DECODER C.B.A. LSEP2007A

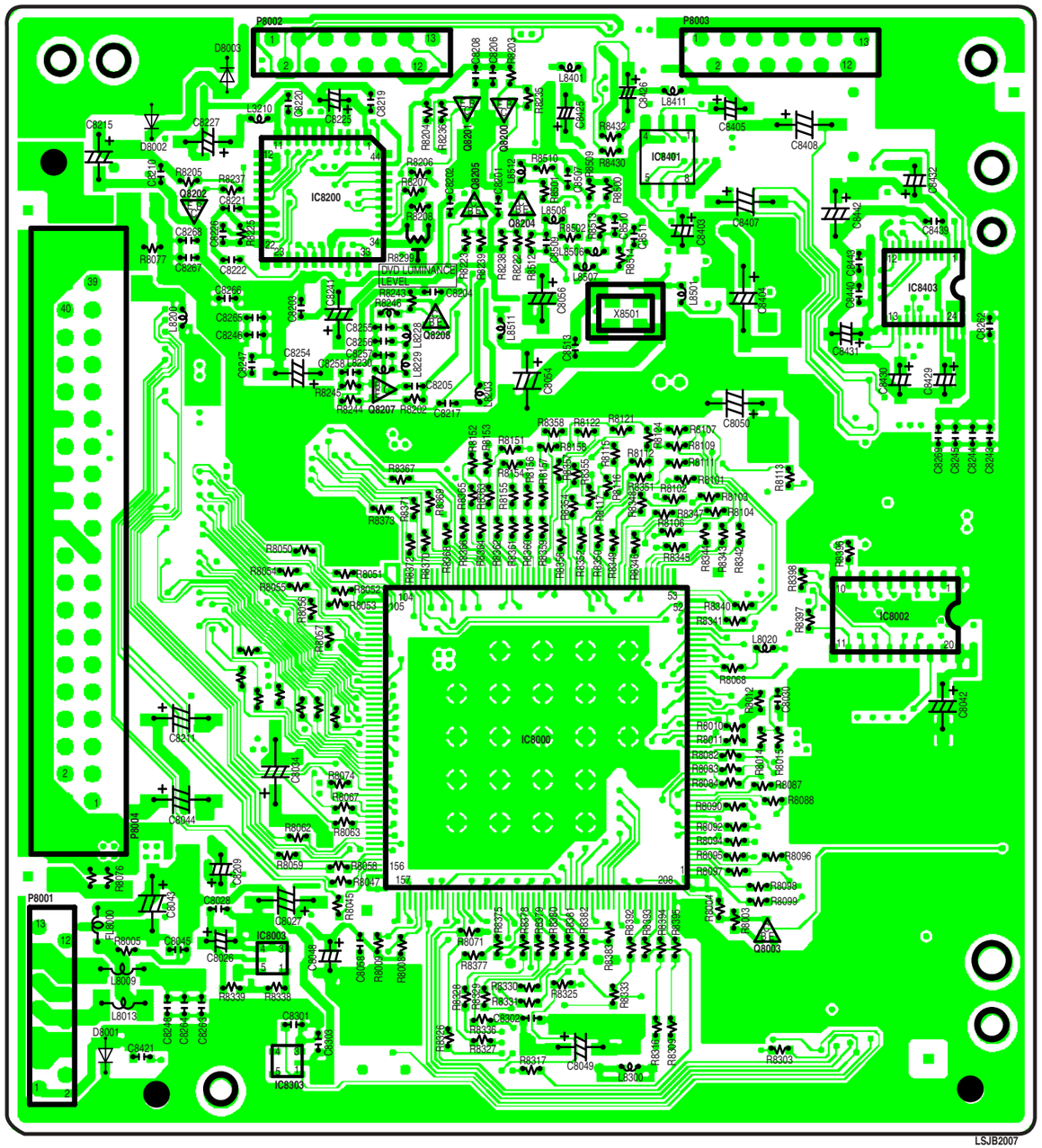
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE:
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS. FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING, PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.

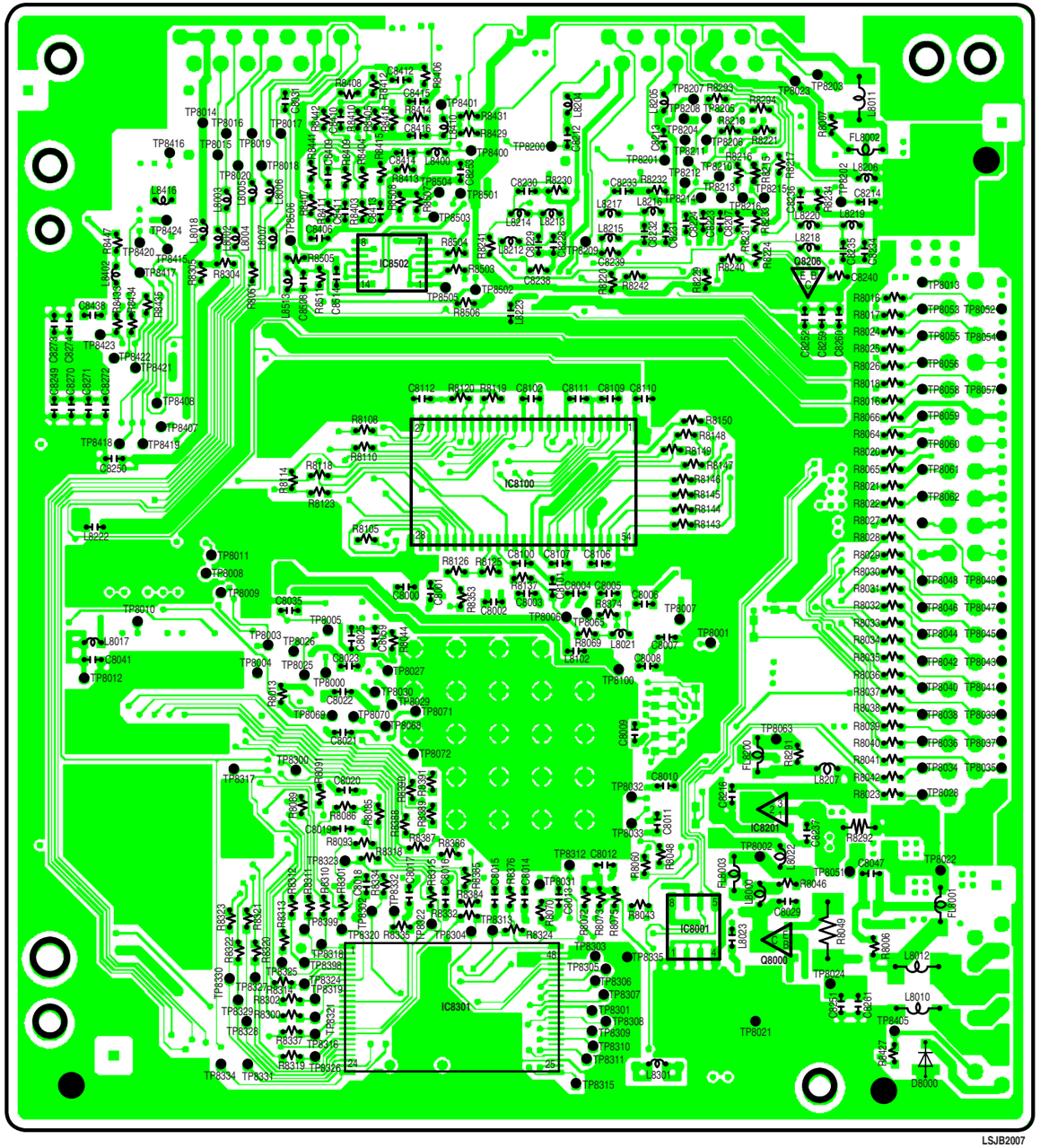
NOTE: MULTILAYER C.B.A.
THIS C.B.A. IS Multi-Layer C.B.A. THIS CIRCUIT BOARD SHOWS COMPONENT LAYOUT-PATTERN FOR COMPONENT SIDE AND FOIL SIDE. LAYOUT PATETRNS ARE SINGLE PATTERN FOR EACH SIDE THAT MAKE EASY TO SIGHT THE COMPONENT LAYOUT.

(COMPONENT SIDE)



LSJB2007

(FOIL SIDE)



LSJB2007

DVD DECODER C.B.A. LSEP2007A
PV-D4742

DOUBLEFEATURE™

Omnivision VHS

Panasonic®

DVD/VCR DECK
Operating Instructions
Model No. PV-D4742

Connections and Initial Setup Procedures are on pages 12 to 17.

DOLBY DIGITAL

DVD VIDEO™

MP3 PLAYBACK

CD-R/RW playback
Ability to play back may depend on recording conditions

dts® DIGITAL OUT

COMPACT disc DIGITAL VIDEO

COMPACT disc DIGITAL AUDIO

energy

As an ENERGY STAR® Partner, Matsushita Electric Corporation of America has determined that this product or product model meets the ENERGY STAR® guidelines for energy efficiency.

Please read these instructions carefully before attempting to connect, operate or adjust this product. Please save this manual.
Spanish Quick Use Guide is included.
(Guía para rápida consulta en español está incluida.)

LSQT0526A

For assistance, please call : 1-800-211-PANA(7262) or send e-mail to : consumerproducts@panasonic.com

Important Safeguards and Precautions

FOR YOUR SAFETY, READ AND RETAIN ALL SAFETY AND OPERATING INSTRUCTIONS. HEED ALL WARNINGS IN THE MANUAL AND ON THE UNIT

INSTALLATION

1 POWER SOURCE CAUTION
Operate only from a power source indicated on the unit or in this manual. If necessary, have your Electric Utility Service Company or Video Products Dealer verify the power source in your home.

2 POLARIZED OR GROUNDING PLUG
As a safety feature, this product comes with either a polarized power cord plug (one blade is wider than the other), or a three-wire grounding type plug.

POLARIZED PLUG CAUTION:

This plug will only fit into an outlet one way. If you cannot fully insert the plug, try reversing it. If it still will not fit, have an electrician install the proper wall outlet. Do not defeat the safety feature by tampering with the plug.

GROUNDING PLUG CAUTION:

This plug will only fit into a three-hole grounding outlet. If necessary, have an electrician install the proper outlet. Do not defeat the safety feature by tampering with the plug.

3 POWER CORD
Make sure power cords are routed so that they are not likely to have anything rest on them, roll over them, or be in the way of walking traffic.
If an extension cord is used, make sure it also has either a polarized or grounded plug and that the cords can be securely connected.
Frayed cords, damaged plugs, and damaged or cracked wire insulation are hazardous and should be replaced by a qualified service technician.
Overloaded outlets and extension cords are fire hazards and should be avoided.

4 DO NOT BLOCK VENTILATION HOLES
Ventilation openings in the cabinet release heat generated during operation. If they are blocked, heat build-up inside the unit can cause failures that may result in a fire hazard or heat damage to cassettes or discs.
For protection, follow these rules:
a. Never cover ventilation slots or the unit while in use, or operate the unit when placed on a bed, sofa, rug, or other soft surface.
b. Avoid built-in installation, such as a book case or rack, unless proper ventilation is provided.

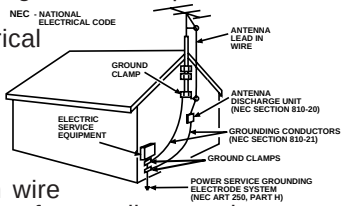
5 PLACEMENT: AVOID EXTREMELY HOT LOCATIONS OR SUDDEN TEMPERATURE CHANGES
Do not place the unit over or near heater or radiator, in direct sunlight, inside closed vehicles, in high temperature [over 104°F (40°C)], or in over 75% humidity. If the unit is suddenly moved from a cold place to a warm one, moisture may condense in the unit and on the tape causing damage. Never subject the unit to vibration, impact, or place it so that the surface is titled as internal parts may be seriously damaged.

6 TO AVOID PERSONAL INJURY
- Do not place unsecured equipment on a sloping surface.
- Do not place this unit on any support that is not firm, level, and adequately strong. The unit could fall causing serious injury to a child or adult and damage to the unit.

- An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.
- Carefully follow all operating instructions and use the manufacturer's recommended accessories when operating this unit or connecting it to any other equipment.

OUTDOOR ANTENNA INSTALLATION

1 SAFE ANTENNA AND CABLE CONNECTION
If an outside antenna or cable system is connected to the equipment, be sure the antenna or cable system is grounded so as to provide some protection against built up static charges and voltage surges. Section 810 of the National Electrical Code, ANSI/NFPA 70 (in Canada, part 1 of the Canadian Electrical Code) provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes and requirements for the grounding electrode.


NEC - NATIONAL ELECTRICAL CODE
ANTENNA LEAD IN WIRE
GROUND CLAMP
ANTENNA DISCHARGE UNIT (NEC SECTION 810-20)
ELECTRIC SERVICE EQUIPMENT
GROUNDING CONDUCTORS (NEC SECTION 810-21)
GROUND CLAMPS
POWER SERVICE GROUNDING ELECTRODE SYSTEM (NEC ART 250, PART H)

2 KEEP ANTENNA CLEAR OF HIGH VOLTAGE POWER LINES OR CIRCUITS
An outside antenna system should be located well away from power lines, electric light or power circuits and where it will never come into contact with these power sources if it should happen to fall. When installing an outside antenna, extreme care should be taken to avoid touching power lines, circuits or other power sources as this could be fatal. Because of the hazards involved, antenna installation should be left to a professional.

USING THE UNIT

If the unit has been in storage or moved to a new location, refer first to the INSTALLATION section of these safeguards.

1 KEEP THE UNIT AWAY FROM WATER OR MOISTURE OF ANY KIND.

2 IF EQUIPMENT IS EXPOSED TO RAIN, MOISTURE, OR STRONG IMPACT, unplug the unit and have it inspected by a qualified service technician before use.

3 DURING AN ELECTRICAL STORM
During a lightning storm, whether indoors or outdoors, or before leaving the unit unused for extended periods of time, disconnect all equipment from the power source as well as the antenna and cable system.

4 WHEN THE UNIT IS PLUGGED IN
- Never expose the unit to rain or water. DO NOT OPERATE if liquid has been spilled into the unit. Immediately unplug the unit, and have it inspected by a service technician. Fire and shock hazards can result from electrical shorts caused by liquid contact inside.
- Never drop or push any object through openings in the unit. Some internal parts carry hazardous voltages and contact can cause electric shock or fire hazard.
  Do not put any foreign object on the disc tray.
- Avoid placing the unit directly above or below your TV set as this may cause electrical interference. Keep all magnets away from electronic equipment.

5 USING ACCESSORIES
Use only accessories recommended by the manufacturer to avoid risk of fire, shock, or other hazards.

6 CLEANING THE UNIT
Unplug the unit. Then, use a clean, dry, chemically untreated cloth to gently remove dust or debris. DO NOT USE cleaning fluids, aerosols, or forced air that could over-spray, or seep into the unit and cause electrical shock. Any substance such as wax, adhesive tape, etc. may mar the cabinet surface. Exposure to greasy, humid, or dusty areas may adversely affect internal parts.

SERVICE

1 DO NOT SERVICE THIS PRODUCT YOURSELF
If, after carefully following the detailed operating instructions, this product does not operate properly, do not attempt to open or remove covers, or make any adjustments not described in the manual. Unplug the unit and contact a qualified service technician.

2 IF REPLACEMENT PARTS ARE REQUIRED
Make sure the service technician uses only parts specified by the manufacturer, or those having the same safety characteristics as the original parts. The use of unauthorized substitutes may result in fire, electric shock, or other hazards.

3 HAVE THE SERVICE TECHNICIAN PERFORM A SAFETY CHECK
After any service or repairs to the unit, request the service technician to conduct a thorough safety check as described in the manufacture's service literature to ensure that the unit is in safe operating condition.

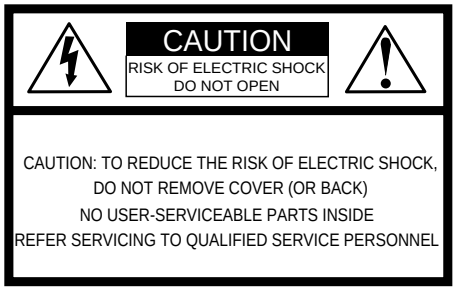
Safety Precautions/Mesures de sécurité

WARNING: To prevent fire or shock hazard, do not expose this equipment to rain or moisture.

CAUTION: To prevent electric shock, match wide blade of plug to wide slot, fully insert.

Avertissement: Afin de prévenir tout risque d'incendie ou de chocs électriques, ne pas exposer cet appareil à la pluie ou à une humidité excessive.

Attention: Pour éviter les chocs électriques, introduire la lame la plus large de la fiche dans la borne correspondante de la prise et pousser jusqu'au fond.


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK)
NO USER-SERVICEABLE PARTS INSIDE
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL

This symbol warns the user that uninsulated voltage within the unit may have sufficient magnitude to cause electric shock.
Therefore, it is dangerous to make any kind of contact with any inside part of this unit.

This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included. Therefore, it should be read carefully in order to avoid any problems.

CAUTION:
UNIT IS A CLASS I LASER PRODUCT.
HOWEVER THIS UNIT USES A VISIBLE LASER BEAM WHICH COULD CAUSE HAZARDOUS RADIATION EXPOSURE IF DIRECTED.
BE SURE TO OPERATE THE UNIT CORRECTLY INSTRUCTED.

WHEN THIS UNIT IS PLUGGED TO THE WALL OUTLET, DO NOT PLACE YOUR EYES CLOSE TO THE OPENING OF THE DISC TRAY AND OTHER OPENINGS TO LOOK INTO THE INSIDE OF THIS UNIT.

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

DO NOT OPEN COVERS AND DO NOT REPAIR YOUR SELF, REFER SERVICING TO QUALIFIED PERSONNEL.

CAUTION:
LASER RADIATION WHEN OPEN DO NOT STARE INTO BEAM.

ATTENTION:
RAYONNEMENT LASER EN CAS D'OUVERTURE.
NE PAS REGARDER DANS LE FAISCEAU.

(Inside of product)

FCC NOTE:

This equipment has been tested and found to comply with part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when operated in a residential environment. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, use the equipment in another location and/or utilize an electrical outlet different from that used by the receiver.
If necessary, consult the dealer or an experienced ratio/TV technician for help. The user may find the booklet, "Something About Interference" available from FCC local regional offices helpful.

FCC Caution:
To assure continued compliance, (example- use only shielded interface cables when connecting to other devices.) Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Apparatus Claims of U.S. Patent Nos. 4,631,603, 4,577,216, and 4,819,098, licensed for limited viewing uses only.

FCC Warning: Any unauthorized changes or modifications to this equipment would void the user's authority to operate.

Region Management Information:

This DECK is designed and manufactured to respond to the Region Management Information that is recorded on a DVD disc. If the Region number described on the DVD disc does not correspond to the Region number of this DECK, this DECK cannot play this disc.

The Region number for this DECK is 1.

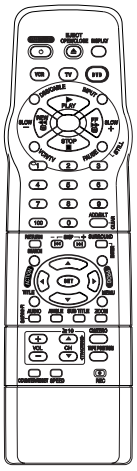
Congratulations

on your purchase of one of the most sophisticated and reliable products on the market today. Used properly, it will bring you years of enjoyment. Please fill in the information below. The serial number is on the tag located on the back of your DECK.

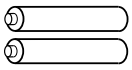
- Date of Purchase _____
- Dealer Purchased From _____
- Dealer Address _____
- Dealer Phone No. _____
- Model No. **PV-D4742**
- Serial No. _____

Accessories

☐ Remote Control
LSSQ0333



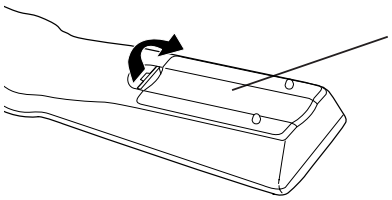
☐ Batteries 2 “AA”



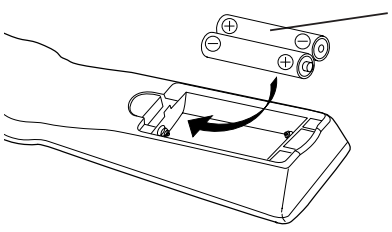
☐ RF Coaxial Cable
VJAS0196

To order accessories, call toll free 1-800-332-5368.

Loading the Batteries



1) Open cover.



2) Insert batteries as marked.

3) Close cover.

☐ **Battery replacement caution**

- Do not mix old and new batteries.
- Do not mix alkaline with manganese batteries.

Disc formats supported by this DECK

DECK can play back discs bearing any of the following marks:

DVD
3” (8 cm) disc / 5” (12 cm) disc

Video CD
3” (8 cm) disc / 5” (12 cm) disc

CD
3” (8 cm) disc / 5” (12 cm) disc

Discs which cannot be played

- DVD with Region No. other than “1” or “ALL”
- DVD of PAL system
- DVD-ROM
- CDV
- DVD-R/DVD-RAM
- CD-ROM
- CD-G

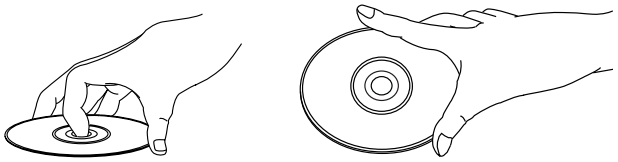
Do not try to play Photo CD.

is a registered trademark.

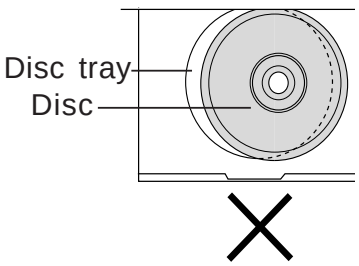
Disc Handling

Handling precautions

- Only hold disc by edges as shown below. Fingerprints, dirt and scratches can cause skipping and distortion.
- Do not write on label side of disc.
- Never use record cleaning sprays, benzine, thinner, static electricity prevention liquids, or any other solvent.
- Be careful not to drop or bend disc.

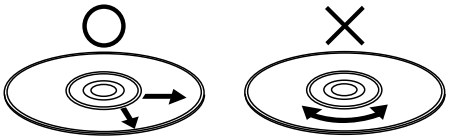


- Do not place more than 1 disc on disc tray.
- Do not try to close disc tray when disc is not properly placed.
- Always store discs in their proper cases when not in use.



To clean disc surface

With a soft, damp (water only) cloth, gently wipe from the center hole to the outer edge as shown below. (Wiping in a circular pattern will scratch the surface.)



If disc is brought from a cold to a warm environment, moisture may form on the disc

Wipe away moisture with a soft, dry, lint-free cloth before using disc. (See above.)

Improper disc storage

Discs could be damaged if stored or left in areas:

- exposed to direct sunlight.
- that are humid or dusty.
- near heat (i.e. heater, radiator, etc.).

For assistance, please call : 1-800-211-PANA(7262) or send e-mail to : consumerproducts@panasonic.com

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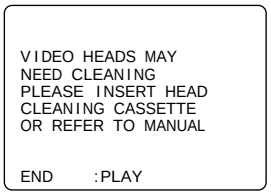
DECK & Cassette Information

Head Cleaning

Playing older or damaged tapes may eventually cause video heads to become clogged.

Video Head Clog Sensor

During playback, this screen appears if clogging is detected. To remove screen, press PLAY on the remote or DECK.



- **Use "dry" type head cleaning cassette only.** (Part No. NV-TCL30PT is recommended.)
- Follow cleaning tape instructions carefully. Excessive use of tape can shorten head life.
- If head clog symptoms persist, contact your nearest Factory Servicenter or authorized Servicenter (see p. 52).

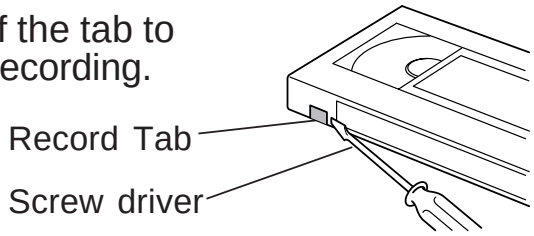
Built-in Head Cleaner

A clean video head helps produce a clear picture.
So, we have equipped your DECK with a built-in, non-chemical head cleaning system that helps prevent clogging of the video heads. Cleaning is performed each time you load or unload a video cassette.

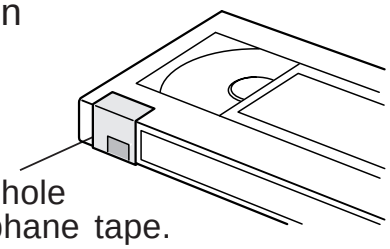
- This feature is preventative only, If your video heads are seriously clogged, consider the use of a chemical non-abrasive head cleaning kit or take your DECK to a Service Center.

Prevent Accidental Tape Erasure

Break off the tab to prevent recording.



To record again



Record/ Playback Time

Only use tapes with the VHS mark in this DECK.

Tape Speed Setting	Type of Video Cassette		
	T60	T120	T160
SP (Standard Play)	1 Hour	2 Hours	2 Hours 40 Minutes
LP (Long Play)	2 Hours	4 Hours	5 Hours 20 Minutes
SLP (Super Long Play)	3 Hours	6 Hours	8 Hours

Cleaning DECK

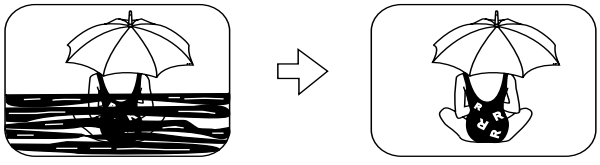
Use a soft cloth or dusting attachment of a vacuum cleaner to remove dust from the ventilation holes on the back sides and bottom of the cabinet. Plastic surfaces are easily scratched and can be marred by alcohol and various solvents. Avoid excessive use of oil-based furniture polishes since the materials used in the cabinet will accumulate more dust. We recommend using a nonabrasive, antistatic cleaner and polisher.

Features for a Quality Picture (VCR)

Digital Auto Picture
Automatically controls the video output signal for less noise depending on the tape condition.

Digital Auto Tracking
Continuously analyzes the signal and adjusts for optimum picture quality.

Manual Tracking Control
(to reduce picture noise)
Use during Playback and Slow Motion mode to reduce picture noise.
Press CH (TRACKING) ▲/▼ on the remote control or on DECK until the picture clears up.
To return to Auto Tracking, **press POWER** off, then on again a few seconds later.



V-Lock Control (to reduce picture jitter)
In Still mode, **CH** (TRACKING) ▲/▼ operate as a V-Lock control.

For assistance, please call : 1-800-211-PANA(7262) or send e-mail to : consumerproducts@panasonic.com

Specifications

Power Source:	120 V AC, 60 Hz
Power Consumption:	Power On: Approx. 32 watts, Power Off: Approx. 4 watts
Video Signal:	EIA Standard NTSC color
Video Recording System:	4 rotary heads helical scanning system
Audio Track:	1 track (Normall), 2 channel (Hi-Fi Audio Sound)
Tuner:	
Broadcast Channels:	VHF 2 ~ 13, UHF 14 ~ 69
CABLE Channels:	Midband A through I (14 ~ 22), Superband J through W (23 ~ 36) Hyperband AA ~ EEE (37 ~ 64), Lowband A-5 ~ A-1 (95 ~ 99) Special CABLE channel 5A (01), Ultraband 65 ~ 94, 100 ~ 125
Input/Output Terminal:	Audio/Video Line Input/Output, RF Input/Output
Input Terminal:	Audio/Video Line Input (Front)
Output Terminal:	S-VHS Output (DVD only), Component Video Output (DVD only) Audio Output 2 (L), (R)
Operating Temperature:	5 °C ~ 40 °C (41 °F ~ 104 °F)
Operating Humidity:	10 % ~ 75 %
Weight:	6.9 kg (15.2 lbs).
Dimensions:	430 (W) x 118 (H) x 364 (D) mm 16-15/16" (W) x 4-5/8" (H) x 14-5/16" (D) inch
Discs Played	
(1) DVD-VIDEO Disc (one layer per side)	5" (12 cm) single-sided single-layer 5" (12 cm) single-sided double-layer 5" (12 cm) double-sided double-layer 3" (8 cm) single-sided single-layer 3" (8 cm) single-sided double-layer 3" (8 cm) double-sided double-layer
(2) Compact Disc (CD-DA, VIDEO CD)	5" (12 cm) disc 3" (8 cm) disc
Digital Audio Output:	Digital Optical Connector
Pickup:	Wave length: 655 nm (DVD), 790 nm (Video CD/CD) Laser power: CLASS II

Note: • Designs and specifications are subject to change without notice.

Definition of Terms (DVD)

Angle: Some DVD discs feature scenes simultaneously shot from different angles. The ANGLE button can be used to view the scene from different angles. (ANGLE Indicator lights on DECK when a scene recorded at different angles is detected.)

Chapter Number: Titles are subdivided into numbered sections. You can quickly search for a favorite scene using these numbers.

DVD: A high-density optical disc on which high-quality pictures and sound have been digitally recorded. DVD incorporates new video compression technology (MPEG II) and high-density recording technology which allow entire movies to be recorded with incredible playback quality.

Playback Control: With Video CD (version 2.0), scenes or information may be selected for viewing or listening from an interactive menu that appears on the TV screen.

Subtitles: Written dialogue which appears at the bottom of the screen.

Time Number: The elapsed play time from the start of a disc or title. Use to quickly find scenes. (May not work with some discs.)

Title Number: For DVD discs with two or more titles, the title is numbered as title 1, title 2, etc.

Track Number: Numbers assigned to tracks on Video CDs and CDs to allow specific tracks to be quickly located.

Video CD: CD containing picture and sound with same quality level as video tape. This DECK also supports Video CDs with playback control (version 2.0).

This product incorporates copyright protection technology that is protected by method claims of certain U.S. Patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision Corporation. Reverse engineering or disassembly is prohibited.

Location of Controls

Remote Control

Bold: **VCR Function**
Italic: *DVD Function*
Bold Italic: ***VCR and DVD Functions***
Normal: Others

EJECT/ *OPEN/CLOSE*
pp. 20, *22*

POWER

VCR mode
p. 28

DSS/CABLE mode
p. 28

PLAY
pp. 20, *22*

REWIND/*SEARCH/ SLOW-*
pp. 20, *23*

VCR/TV
p. 21

NUMBER keys

RETURN/ **SEARCH**
pp. 22, **30**

ACTION
pp. 18, *45*

SKIP ▶▶|
SKIP |◀◀
p. 23

TITLE
p. 38

DISPLAY
p. 11, *41*

TV mode
p. 28

DVD mode
p. 28

INPUT
p. 35

FAST FORWARD/*SEARCH/ SLOW+*
pp. 20, *23*

PAUSE/*STILL*
pp. 20, *23*

STOP
pp. 20, *22*

ADD/DELETE/ *CLEAR*
pp. 19, *39, 44*

SURROUND/ ENTER
pp. 23, 28

PROGRAM
p. 24

SELECT ▲▼◀▶

MENU
p. 38

SET

SUB TITLE
p. 36

ZOOM
p. 37

COMMERCIAL SKIP/ ZERO
pp. 31, 32

CHANNEL ▲/▼ TRACKING/V-LOCK
pp. 21, 6

TAPE POSITION/ *AUDIO CONTROL*
p. 34, *40*

RECORD
p. 21

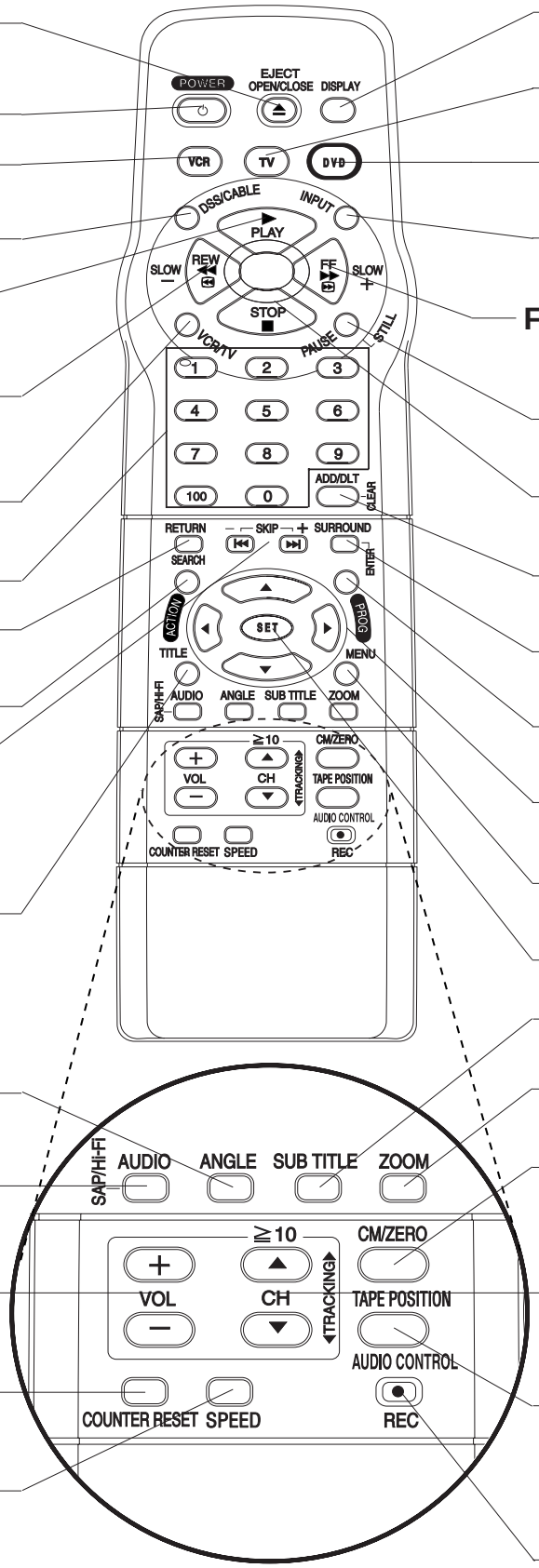
ANGLE
p. 37

AUDIO **(SAP/ Hi-Fi)**
pp. 27, *36*

VOLUME +/–
p. 28

COUNTER RESET
p. 32

SPEED
p. 21



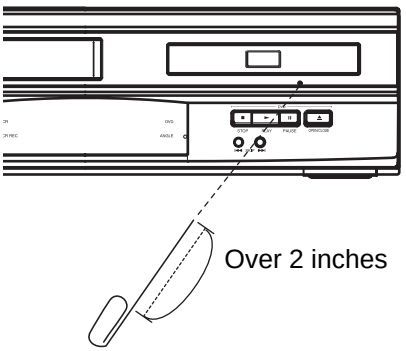
EJECT button: When this button is pressed in VCR mode, the tape is ejected.
This button is inoperative if pressed during recording.
If pressed in DVD mode, the disc tray opens or closes.

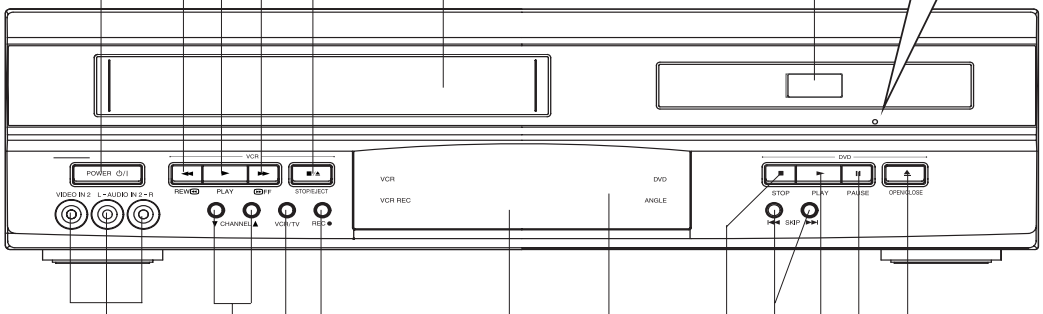
For assistance, please call : 1-800-211-PANA(7262) or send e-mail to : consumerproducts@panasonic.com

Front View of DECK

Bold: **VCR Function**
Italic: *DVD Function*
Bold Italic: ***VCR and DVD Functions***
Normal: Others

If the disc cannot be removed...
First, unplug DECK. Then, prepare a rigid wire (e.g. an extended paper clip) and, applying moderate force, insert it straight into the hole at the base of the tray.
The tray will eject a little. Now, pull the tray all the way out and remove the disc.





STOP/EJECT **p. 20**

FAST FORWARD/SEARCH **p. 20**

PLAY **p. 20**

REWIND/SEARCH **p. 20**

POWER

Cassette Compartment

Disc Tray

Audio/Video Input Connector 2 (LINE 2) **p. 35**

Multi Function Display p. 11

Remote Sensor

OPEN/CLOSE *p. 22*

PAUSE *p. 23*

PLAY *p. 22*

SKIP ▶▶|

SKIP |◀◀ *p. 23*

CHANNEL ▲/▼ TRACKING/V-LOCK **pp. 21, 6**

VCR/TV **p. 21**

REC **p. 21**

STOP *p. 22*

Location of Controls (continued)

Rear View of DECK

Bold: **VCR Function**
Italic: *DVD Function*
Bold Italic: ***VCR and DVD Functions***

AC Power Plug

- While plugged into an AC outlet, this DECK consumes 4 W of electrical power in off mode.

VHF/UHF Antenna Output Terminal p.12

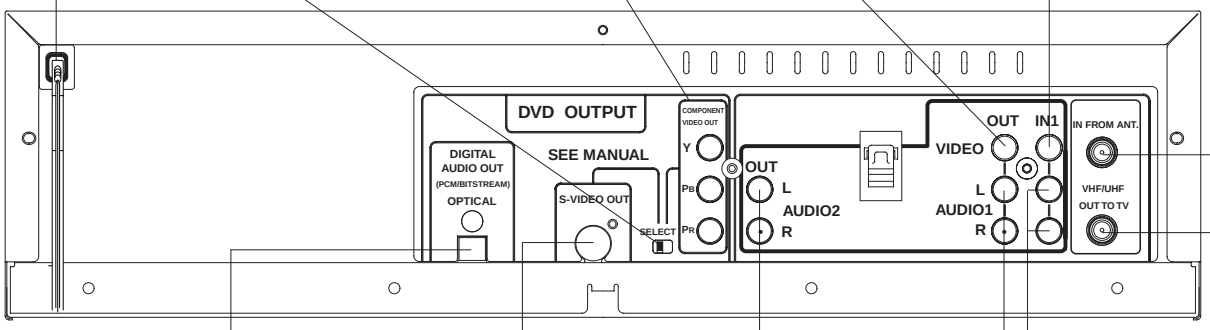
Component Video Output Connector (Y, P_B, P_R) (DVD Only) p. 13

VHF/UHF Antenna Input Terminal p. 12

Video Output Connector p. 12

SELECT SW (DVD Only) p. 13

Video Input Connector p. 35



Optical Digital Audio Output Connector (DVD Only) p. 15

S-Video Out Connector (DVD Only) p. 10, 13

Audio Input Connector (L/R) p. 35

Audio Output 2 Connector (L/R) p. 13

Audio Output 1 Connector (L/R) p. 12

The following table shows the status of the output jacks when in VCR or DVD mode.

	Video Output Audio Out 1 Audio Out 2	*Component Video Output*	*S-VIDEO OUT*
VCR	YES	N/A	N/A
DVD	YES	YES ←Swichable→ YES	

Note

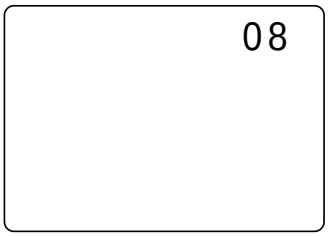
- ACTION and PROG buttons on the remote are not available when using Component Video Output and S-VIDEO OUT.
  Please set TV to either RF INPUT or VIDEO INPUT, and then press ACTION or PROG.

For assistance, please call : 1-800-211-PANA(7262) or send e-mail to : consumerproducts@panasonic.com

Displays (On Screen & Multi Function)

On Screen Displays (VCR)

Function & Channel Displays



When a function button is pressed, e.g. PLAY, or you change channels, a 5-second display appears.

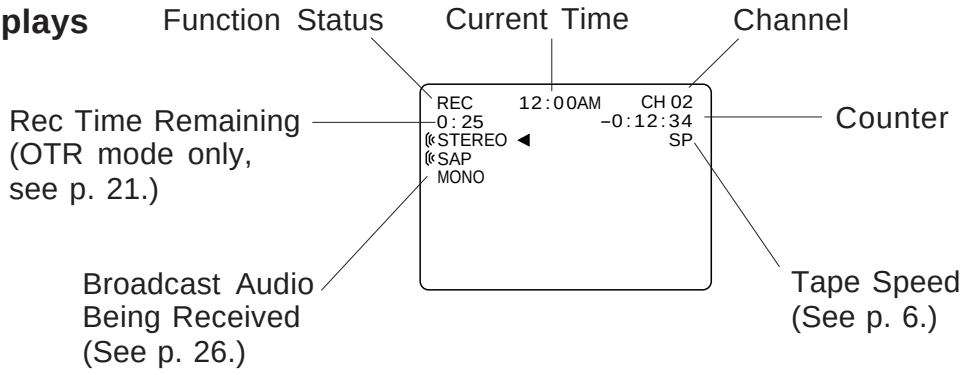
Blank Tape/ No Video Signal Indications

Whenever a blank section of a tape comes up in Play mode, or when the selected channel has no broadcast signal with Weak Signal Display Feature (p. 33) set to OFF, the TV screen will turn solid blue.

VCR Status & Clock Displays

To display or remove overlay at right,

➛ **press DISPLAY**.



Multi Function Display

VCR Indicator
Lights up when the VCR/TV selector is set to VCR.

Power Indicator
Lights up when power is on.

VCR mode Indicator
Lights up when DECK is VCR mode.

VCR REC Indicator
Lights up during recording.

Hi-Fi Indicator
Lights up when Hi-Fi audio is monitored in Play mode.

Timer Indicator
Lights up when DECK is set for Timer Recording, or when One Touch Recording (OTR) is used. Flashes when Timer Recording is set, but a tape has not been inserted into DECK and when a power interruption occurs during Timer Programming.

DVD mode Indicator
Lights up when DECK is DVD mode.

Clock/ Status/ Channel/ Speed Display
Displays the current time. Briefly displays VCR status when a function button is pressed. Briefly displays the channel number, or “L1” or “L2” when a channel or line input is selected. Briefly displays the recording speed when SPEED is pressed.

AM
Lights up before noon. PM is not displayed.

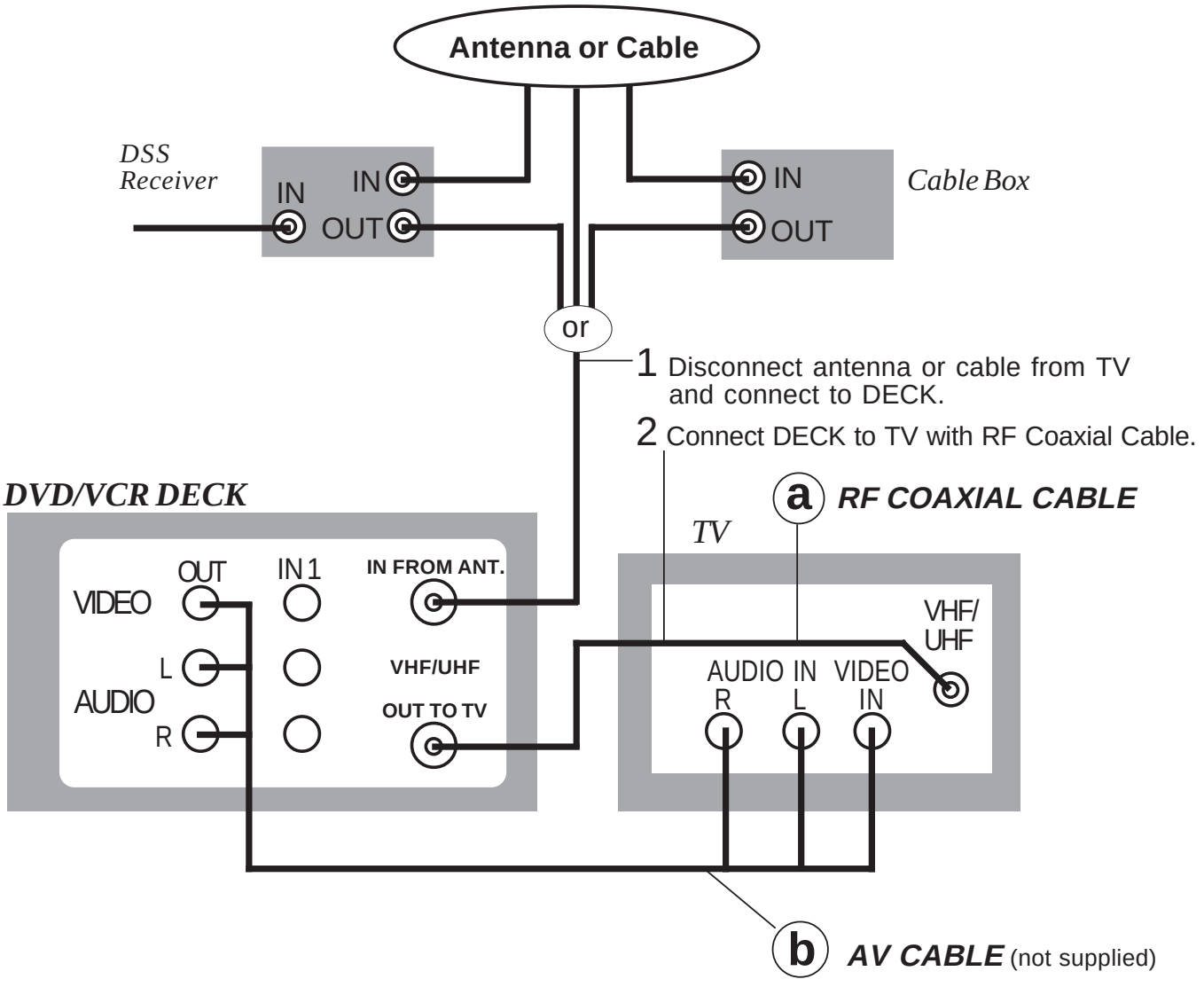
ANGLE Indicator
Lights up when a scene recorded at different angeles is detected. See p. 37. (DVD only).

Connections

Basic Connections

- **If your TV has AUDIO and VIDEO IN terminals, connect them to DECK for higher quality picture and sound.**
- You can enjoy stereo sound even if your TV is not stereo by connecting a stereo amplifier to DECK.
- Connect DECK and TV with an RF Coaxial Cable ⓐ (supplied) or an AV Cable ⓑ (not supplied) as shown in the figure below.

■ **DSS Receiver ➡DECK ➡TV** ■ **DECK ➡ TV** ■ **Cable Box ➡DECK ➡TV**



WARNING

When using "Nut type" RF coaxial cables, tighten with fingers only. Overtightening may damage terminals.

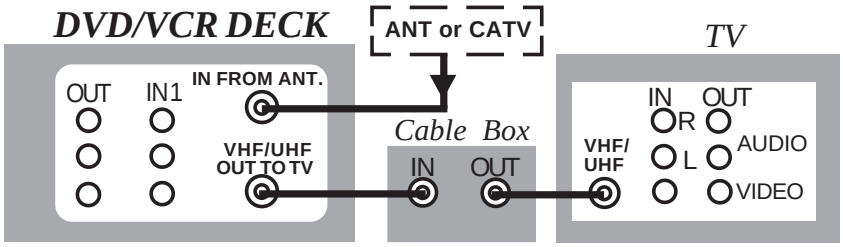
Note to CABLE system installer

This reminder is provided to call the CABLE system installer's attention to Article 820-40 of the NEC in USA (and to the Canadian Electrical Code in Canada) that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

For assistance, please call : 1-800-211-PANA(7262) or send e-mail to : consumerproducts@panasonic.com

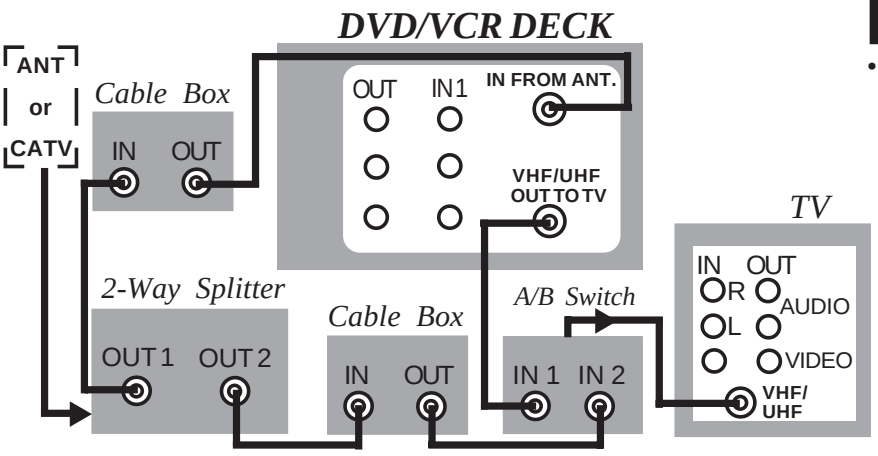
Other Connections

■ DECK➡Cable Box➡TV



You Can	You Cannot
• view any (including scrambled) channel. • use Remote Control to select channels without using Multi-brand control feature.	• record scrambled channels.

■ Connect With Two Cable Boxes



You Can	You Cannot
• record and view both scrambled and unscrambled channels if additional equipment is added. This connection requires: two converter boxes, an A/B switch, and a 2-way splitter.	• view channel other than the one selected for any type of recording. • do a Timer recording of a channel unless you select it on the Cable Box.

Connections For DVD Only

①Connect AUDIO OUT2 (L, R) to the AUDIO IN (L, R) of the TV. (audio input for COMPONENT or S-VIDEO mode).

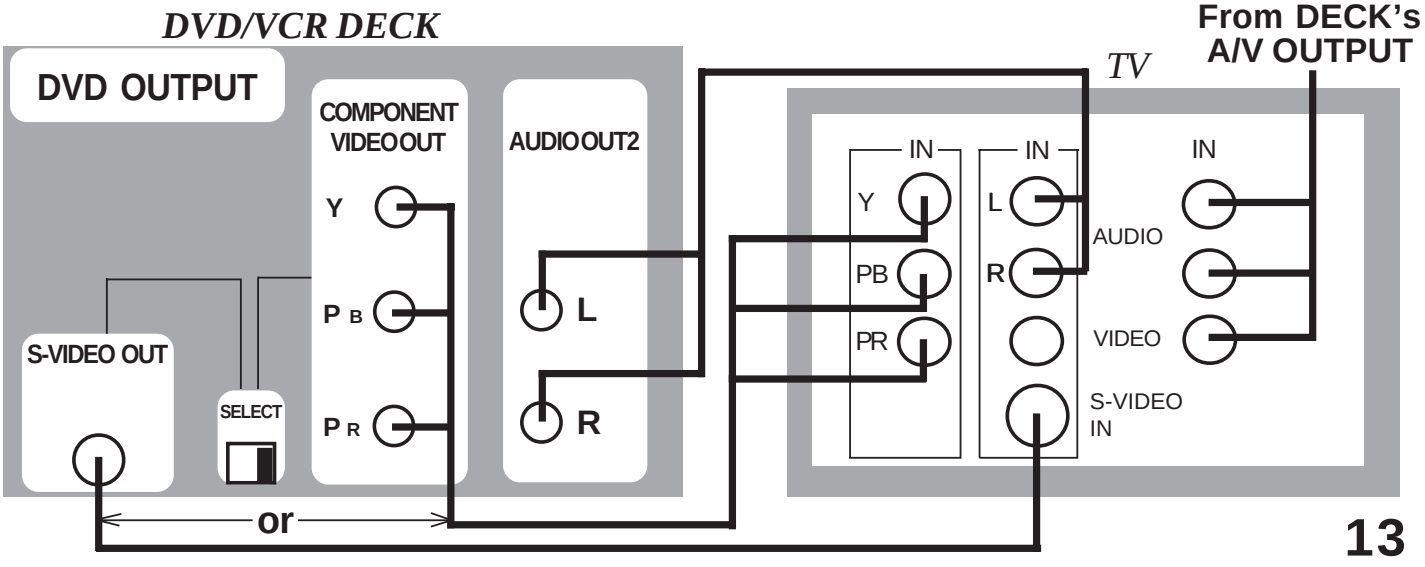
②If your TV has COMPONENT VIDEO INPUT, set SELECT SW to COMPONENT VIDEO OUT. If your TV does not have COMPONENT VIDEO INPUT but has S-VIDEO INPUT, set SELECT SW to S-VIDEO OUT.

Note • **The picture will not be displayed if the SELECT SW is not set to the correct video output.**

③When in DVD mode, set your TV to either COMPONENT VIDEO IN or S-VIDEO IN.

Notes • **You can watch DVDs through the S-VIDEO or COMPONENT VIDEO, VHF/UHF OUT TO TV, and VIDEO OUT connections to your TV. The VCR and TUNER pictures are available only from the VIDEO OUT and VHF/UHF OUT TO TV connections to your TV.**

• ACTION and PROG buttons on the remote are not available when using S-VIDEO OUT and COMPONENT Video Output. Please set TV to either RF INPUT or VIDEO INPUT, and then press ACTION or PROG.

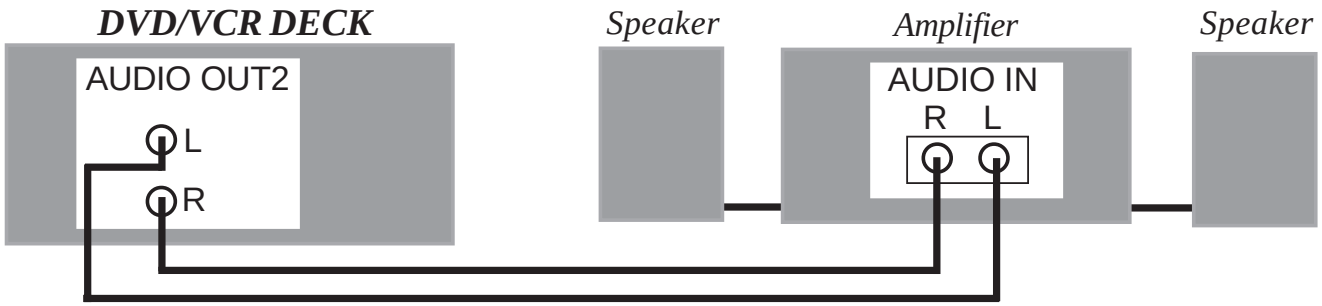


Audio Connections

Ready Checklist

- ☐ Turn down the volume, then turn DECK, as well as other equipment to be connected, off before proceeding with connection.
- ☐ Do not block ventilation holes of any of the equipment and arrange them so that air can circulate freely.
- ☐ Read through the instructions before connecting other equipment.
- ☐ Ensure that you observe the color coding when connecting audio and video cables.

■ DECK ➡ Amplifier ➡ Speaker



Enjoying digital audio output from the digital audio output connector

Notes on audio output from the optical digital audio output connector

Disc	Sound recording format	Optical digital audio output from connector
DVD	Dolby Digital	Dolby Digital bitstream (1-5.1 ch) or OFF (no output)*1
	Linear PCM (48/96 kHz 16/20/24bit)	Linear PCM (2ch) (48 kHz sampling/16 bit only)*2 or no output*1
	dts	Bitstream or no output*1
Video CD	MPEG 1	PCM (44.1 kHz sampling)
CD	Linear PCM	Linear PCM (44.1 kHz sampling)
MP3	MP3	Linear PCM (It depends on the MP3 file)

*1 The type of audio output from the connector can be selected by the Settings for DVD Operation. (See p. 46.)

*2 Sound having 96 kHz sampling is converted into 48 kHz sampling when it is output from the DECK's optical digital audio output connector.

For your reference:

- Dolby Digital is a digital sound compression technique developed by the Dolby Laboratories Licensing Corporation. Supporting 5.1-channel surround sound, as well as stereo (2-channel) sound, this technique enables a large quantity of sound data to be efficiently recorded on a disc.
- Linear PCM is a signal recording format used in CDs. While CDs are recorded in 44.1 kHz/16 bit, DVDs are recorded in 48 kHz/16 bit up to 96 kHz/24 bit.
- If you have a Dolby Pro Logic Surround decoder, you will obtain the full benefit of Pro Logic from the same DVD movies that provide full 5.1 channel Dolby Digital soundtracks, as well as from titles with the Dolby Surround mark. For information on Panasonic or Technics Dolby Pro Logic Surround Sound Decoders please contact your local dealer.

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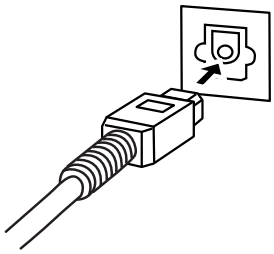
For assistance, please call : 1-800-211-PANA(7262) or send e-mail to : consumerproducts@panasonic.com

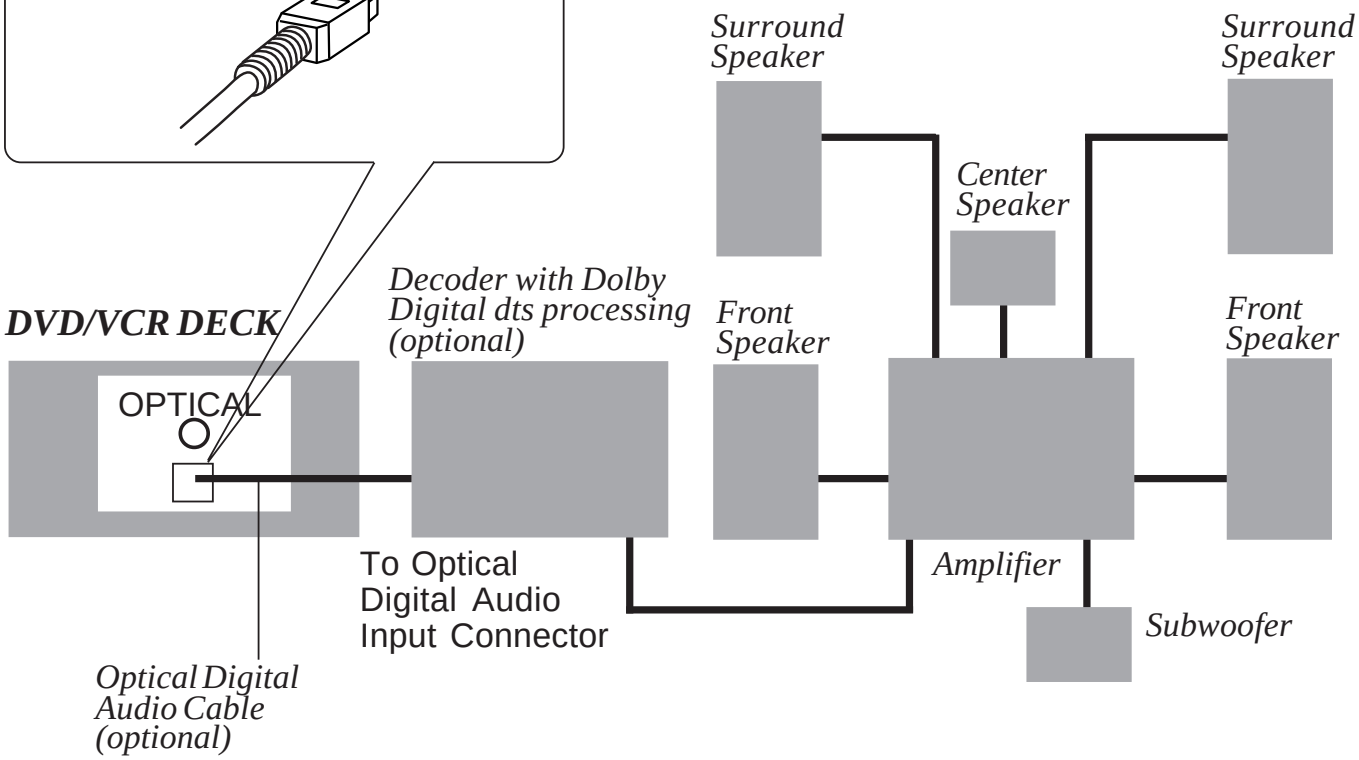
■ DECK ➡ Dolby Digital Decoder ➡ Amplifier ➡ Speaker
or
DECK ➡ dts (digital theater systems) Decoder ➡ Amplifier ➡ Speaker

When DVDs recorded in Dolby Digital or dts are played, Dolby Digital bitstream or dts bitstream is output from the DECK OPTICAL digital audio output connector. When DECK is connected to a Dolby Digital decoder or dts decoder, you can enjoy theater-quality audio in your home. [An optical digital audio cable (optional) is required when an optional Dolby Digital decoder or dts decoder is used.]

Notes on connecting an optical digital audio cable (optional)

- Firmly connect the cable to the connector.





Caution for optical digital audio output connector:

- **When connecting an amplifier (with an optical digital input connector) which does not contain the Dolby Digital or dts decoder, be sure to select "OFF" at "Dolby Digital" and "OFF" at "dts" of the Settings for DVD Operation "AUDIO OUTPUT" (see p. 46). Otherwise, any attempt to play DVDs may cause such a high level of noise that it may be harmful to your ears and damage your speakers.**
- **When a dts decoder is connected, please select "Bitstream" at "dts" of the Settings for DVD Operation "AUDIO OUTPUT". If "OFF" is selected, there will be no sound. (See p. 46).**
- **Video CDs and CDs can be played as normal.**

Note:

- Some dts decoders which do not support DVD-dts interface may not work properly with DECK.

Initial Setup for Basic Connections

Before doing Initial Setup

1 **Turn TV on**.

2 See connections ⓐ RF Coxial Cable Connection and ⓑ AV Cable Connection on p. 12.

<RF Coxial Cable Connection>
Set **TV** to **channel 3.**

<AV Cable Connection>
Set **TV** to **VIDEO.**

3 **[DECK ➔ TV]**

- Go to “Doing Initial Setup (Redy to Play).” (See below.)

[Cable Box ➔ DECK ➔ TV], [DSS ➔ DECK ➔ TV]

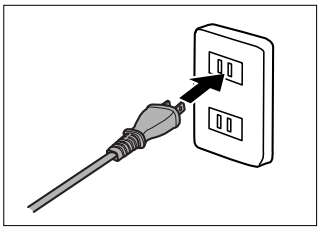
- Turn on Cable Box and set it to your Public Broadcasting Station (PBS) channel in your time zone.
- If you use DSS Receiver, it must be turned off.

Doing Initial Setup (Ready to Play)

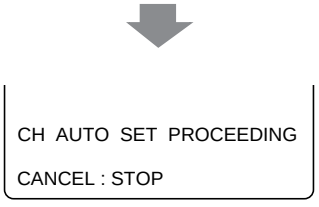
1 **Press VCR on remote for VCR mode.**

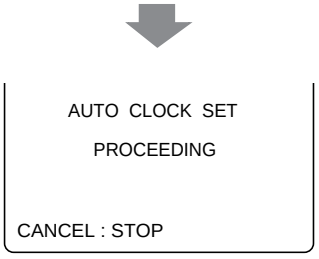
2 **Plug VCR Power Cord into AC wall outlet. DECK comes on and auto channel and clock set starts.**

- If screen below does not appear, check DECK - TV connection and, if TV is tuned to channel 3, try switching it to channel 4.
- To change VCR’s output channel, please refer to “VCR’s Output Channel” on p. 19.



Plugging the AC Power Plug into an AC outlet





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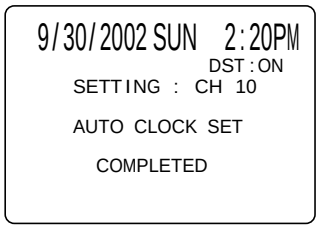
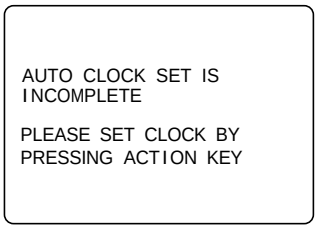
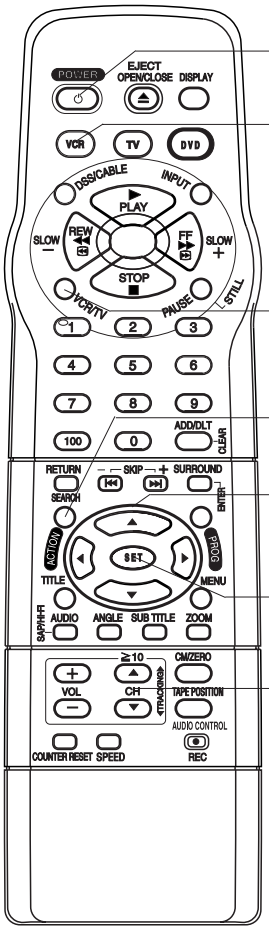
3 **Settings are made automatically. When setup is done, this screen appears.**



If "AUTO CLOCK SET IS INCOMPLETE" appears, manually set clock. See below.

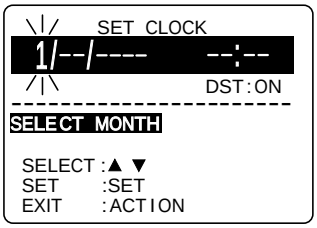




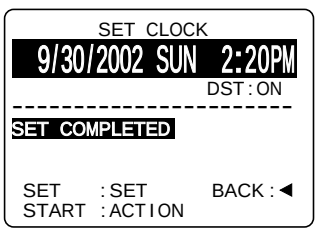
Manual Clock Set

If Auto Clock Set was incomplete.

1 **Press ACTION* on remote to display CLOCK screen.**



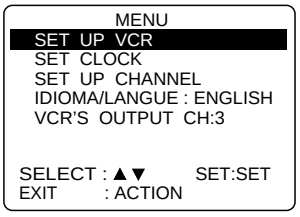
2 **Press ▲▼ to select the month and SET to set. In the same manner, select and set the date, year, time, and DST (daylight saving time).**



3 **Press ACTION to start clock and exit.**

Reset Language, Channels, Clock

1



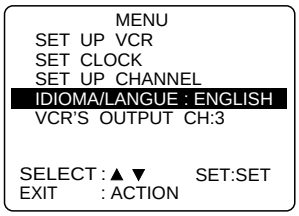
Press ACTION* to display MENU.

- ACTION and PROGRAM buttons are not available when using COMPONENT Video Output and S-VIDEO OUT. Please set TV to either RF INPUT or VIDEO INPUT, and then press ACTION or PROGRAM.

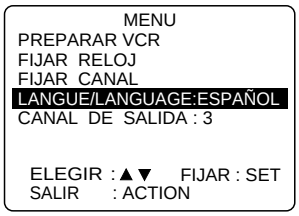
2

■ Language

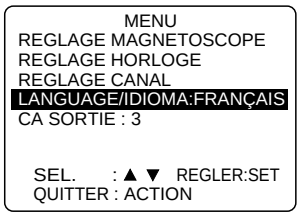
1) **Press ▲▼** to select language item.



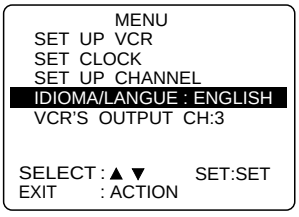
2) **Press SET** repeatedly.



For Spanish



For French

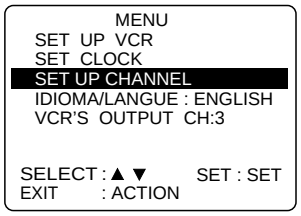


For English

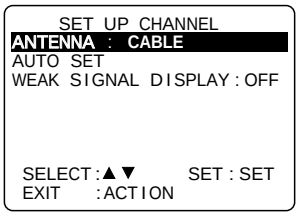
3) **Press ACTION** to exit.

■ Channels

1) **Press ▲▼** to select "SET UP CHANNEL," and **press SET**.

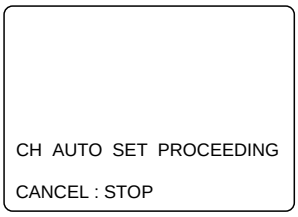


2) **Press ▲▼** to select "ANTENNA," then **press SET** to set your antenna system ("TV" or "CABLE.")



3) **Press ▲▼** to select "AUTO SET," then **press SET**.

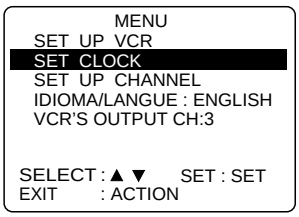
- If you use Cable Box, set it to the PBS channel in your time zone.



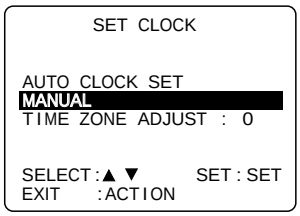
- After Channel Auto Set is finished, Clock Auto Set will be performed.

■ Clock

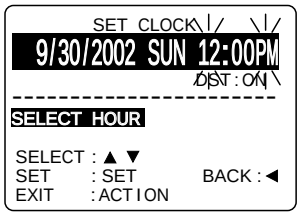
1) **Press ▲▼** to select "SET CLOCK," and **press SET**.



2) **Press ▲▼** to select "MANUAL," and **press SET**. (For Auto Clock Set, select "AUTO CLOCK SET.")



("TIME ZONE ADJUST" appears only when auto clock is set.)



3) **Press ▲▼** and **◀** to select, then set the date, time, and DST (Daylight Saving Time).

4) **Press ACTION** twice to start Clock and exit this mode.

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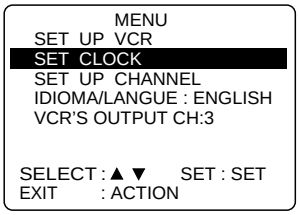
VCR's Output Channel

*__Important:__ If a remote control button does not work when pressed, press the VCR button on the remote and try the button again.

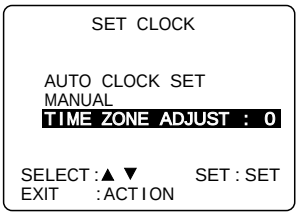
Time Zone Adjust

(Only when Auto Clock is set.)

1) **Press ▲▼** to select "SET CLOCK," and **press SET**.



2) **Press ▲▼** to select "TIME ZONE ADJUST,"



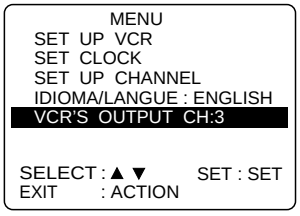
and **press SET** to subtract or add hour(s) as necessary.

3) **Press ACTION** twice.

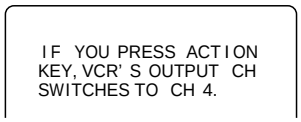
- "TIME ZONE ADJUST" returns to "0" if clock is set manually.

VCR's Output Channel

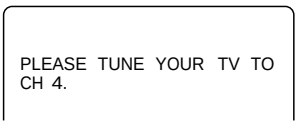
1) **Press ▲▼** to select "VCR'S OUTPUT CH.," and **press SET**.



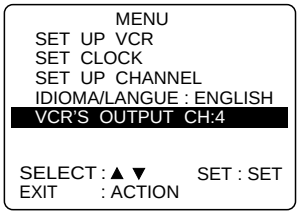
2) **Press SET**.



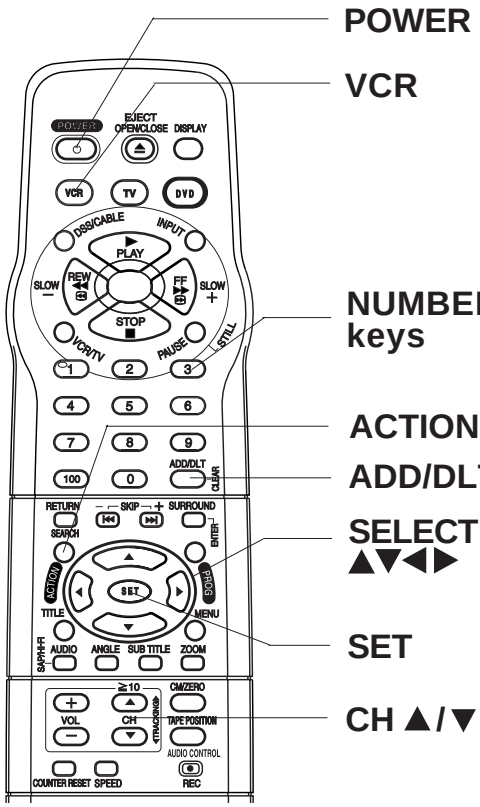
3) **Press ACTION**.



After 3 seconds

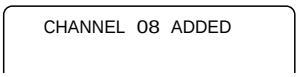


- To Make Corrections, repeat steps 1) ~ 3).

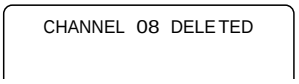


Add or Delete a Channel

To add channel:
Select channel with **NUMBER keys** and **press ADD/DLT**.



To delete channel:
Select channel with **CH ▲/▼** or **NUMBER keys** and **press ADD/DLT**.



DST (Daylight Saving Time)

DECK auto adjusts clock for DST. (p. 17.)

Spring (First Sunday in April)
DST:ON ➔ Sets clock ahead one hour.

Autumn (Last Sunday in October)
DST:ON ➔ Turns clock back one hour.

- If your area does not observe Daylight Saving Time, select DST:OFF.
- Keep these time changes in mind when programming DECK for timer recordings.

Playback/ Record on a Tape

Ready Checklist

- ☐ All connections are made (pp. 12 ~ 15).
- ☐ TV and DECK are plugged in.
- ☐ TV is on and tuned to CH3, 4, or VIDEO.
- ☐ Remote is in VCR mode. (Press VCR.)

Playback a Tape

1 **Insert a tape.**

- DECK power comes on. The VCR mode and "VCR" indicator light up on Multi Function Display.

2 **Press PLAY** to play a tape.

- If tape has no rec. tab (p. 6), auto play begins.

Special Features During Play

■ **Forward/Reverse Scene Search**
- ➔ **Press FF/SLOW+** or **REW/SLOW-**.
- ➔ **Press PLAY** to release.

■ **Still (Freeze) Picture**
- ➔ **Press PAUSE/STILL**.
- ➔ **Press PLAY** to release.

■ **Frame by Frame Picture**
- ➔ **Press PAUSE/STILL** in Still mode.
- ➔ **Press PLAY** to release.

■ **Slow Motion Picture**
- ➔ **Press FF/SLOW+** (increase speed) or **REW/SLOW-** (decrease speed) in Still mode.
- ➔ **Press PLAY** to release.

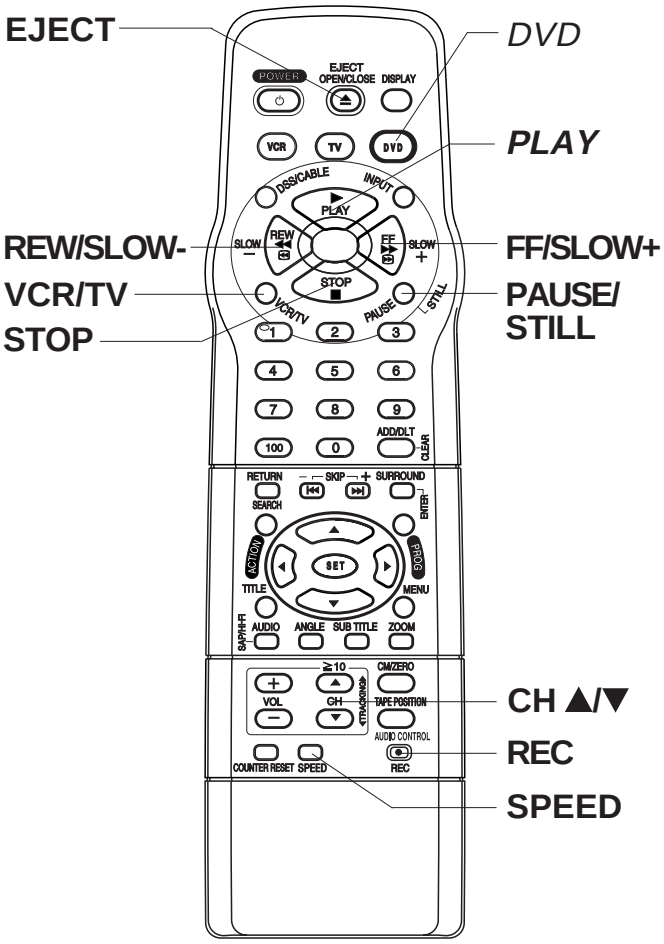
Notes

- These features work best in SP or SLP mode.
- The sound will be muted.
- To reduce picture noise, see "Manual Tracking Control" on p. 6.
- After DECK is in Still or Slow mode for 3 minutes, it will switch to Stop mode automatically to protect the tape and the video head.

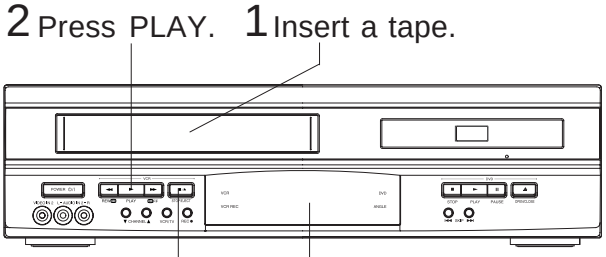
3 **Press STOP** to stop a tape.

■ **Press REW/SLOW- or FF/SLOW+** in Stop mode to rewind or fast forward a tape.

■ **Press EJECT** on remote, or **STOP/EJECT** on DECK to eject a tape.



Playback using DECK buttons



■ Press STOP/EJECT to stop and/ or eject a tape.

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Record on a Tape

1 **Insert a tape with a record tab** (p. 6).
- DECK power comes on. The VCR mode and "VCR" indicator light up on Multi Function Display.

2 **Press CH ▲▼*, or NUMBER keys** to select the channel.
- For "LINE" input, see p. 35.
- If channels is over 100, press 100 key then press the remaining 2 digits.

3 **Press SPEED** to select the record speed (p. 6).

SP = Standard Play **LP** = Long Play
SLP = Super Long Play
- Speed appears on-screen and on Multi Function Display.

4 **Press REC** to start recording.
(The VCR REC indicator lights up on Multi Function Display),
- To edit out unwanted scenes, **press PAUSE/STILL** to pause, and again to resume recording.
- You cannot view another channel during recording.

5 **Press STOP** to stop recording.

■ **One Touch Recording** (recording in progress),
- ➔ **Press REC** repeatedly to set the recording length
- ➔ (30 min. ~ 4 hours).
  - DECK shuts off after the preset record length.

■ **Record one station, watch another,**
- ➔ **press VCR/TV** ("VCR" goes out on Multi Function Display),
- ➔ select channels at TV (recording continues).

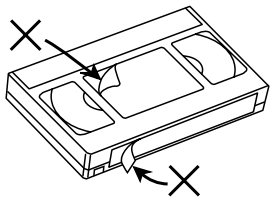
■ **Select Channels at DECK** (In STOP or REC. PAUSE mode),
- ➔ **press VCR/TV** ("VCR" lights up on Multi Function Display),
- ➔ select channels at DECK.

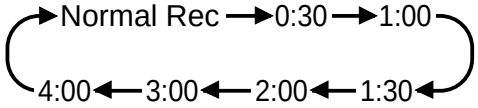
■ **Play a disc while recording a tape.**
- ➔ insert a disc during recording,
- ➔ **press *DVD***, and then **press *PLAY***.

Notes
- **It is not possible to record from DVD/ Video CD/ CD to VHS tape using DECK.**
- **Watching one channel and recording another is not possible when using Cable Box or DSS Receiver.**
- After 5 minutes in Pause mode, DECK stops to protect a tape and video heads.

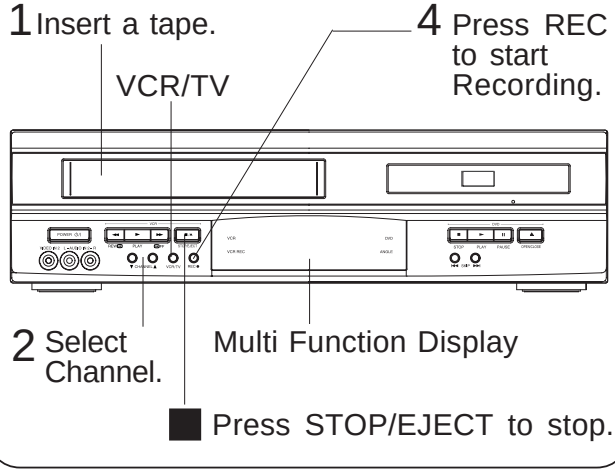
This video recorder, equipped with HQ (High Quality) system, is compatible with existing VHS equipment. Only use tapes with the VHS mark. Only tapes tested and inspected for use in 2, 4, 6, and 8 hour machines are recommended.

Note
Remove loose or peeling labels from tapes to prevent tape jam.





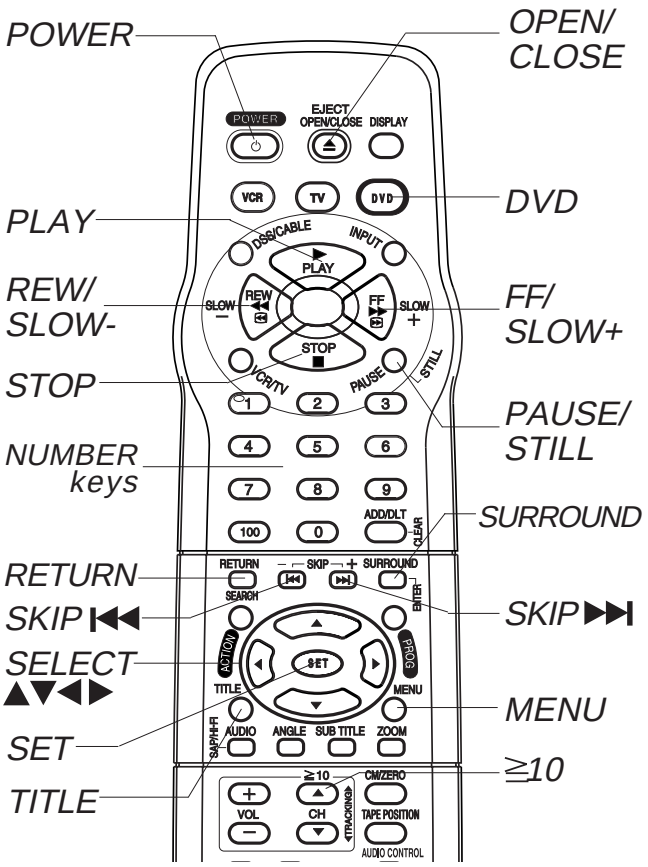
Record using DECK buttons



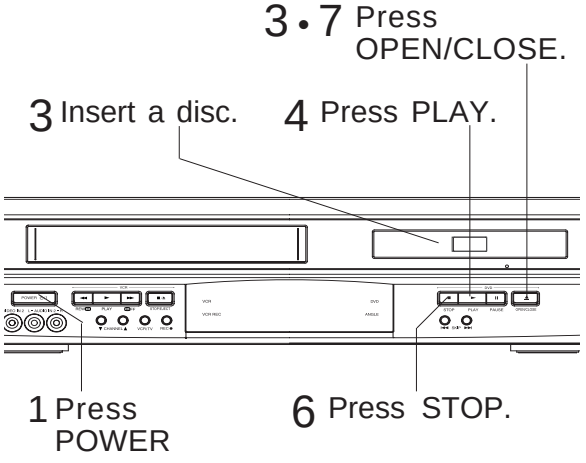
Basic DVD Operation

Ready Checklist

- ☐ All connections are made. (pp. 12 ~ 15)
- ☐ DECK is plugged in.
- ☐ If DECK is connected to an audio amplifier, turn the stereo system's power on.



Operation using DECK buttons



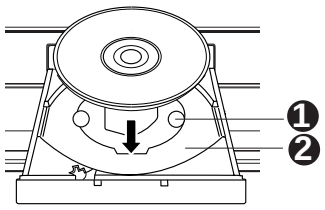
*1 Interactive DVD...
May include multiple camera angles, stories, etc.

*2 Video CD with playback control...
Particular scenes or information can be interactively selected from a menu that appears on the screen.

1 **Press *POWER**** on the remote or DECK.

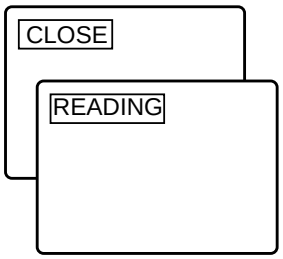
2 **Press *DVD*** to select DVD mode.
- If a disc is already inserted, go to step 4. (Depending on the disc, playback may start automatically.)

3 **Press *OPEN/CLOSE*,** and then place a disc into the disc tray.



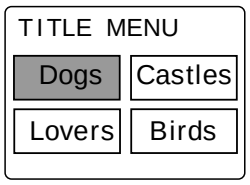
- Hold disc by its edges only (p. 7) with printed side up and use guides to place into tray.
  Use ❶ 3"(8 cm)
  or ❷ 5" (12 cm) disc.

4 **Press *PLAY*** to start playing.
Disc tray closes automatically.

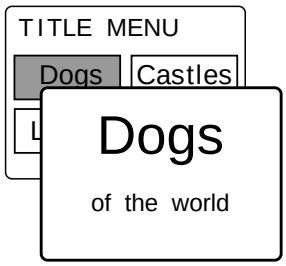


- You may also close tray by **pressing *OPEN/CLOSE***.
- Data reading time differs with each disc.

<Example>



If an interactive DVD*1 or a Video CD with playback control*2 is used and TITLE MENU appears, go to step 5.

5 

Press ▲▼◀▶ or ***NUMBER keys*** (see below) to select title, and **press *SET*** to play.

<Example>

Using NUMBER keys starts playing automatically.

<Example>	1 digit number	1 ••• 1
	2 digit number	12 •••≧10 1 2
	3 digit number	123 •••100 1 2 3

Press SKIP ⏭| or |⏮ to go to next or previous menu screen.
- SKIP function not available with all discs. Please refer to disc jacket for operation information.

To return to menu (play stops)
Press *TITLE*, *MENU*, or ***RETURN***. (DVD)
Press *RETURN*. (Video CD)

6 **Press *STOP*** to stop playing.

7 **Press *OPEN/CLOSE*** to eject the disc.

For assistance, please call : 1-800-211-PANA(7262) or send e-mail to : consumerproducts@panasonic.com

*__Important:__ If a remote control button does not work when pressed, press the DVD button on the remote and try the button again.

■ Forward/Reverse Scene Search

Press *FF/SLOW+* or ***REW/SLOW-*** during play.

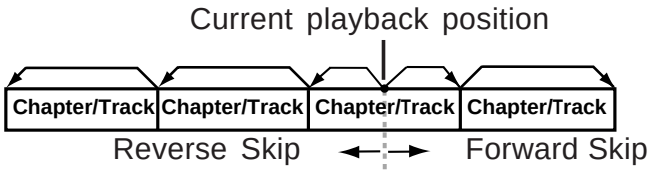
Press *PLAY* to release.

- Starting forward/reverse search during play started from menu on Video CDs may recall menu.
- Search speed, slow at first, increases with each additional press of the button up to 5 levels.

■ Forward/Reverse Chapter/Track Skip

Press *SKIP* ▶▶| or **|◀◀ *SKIP*** during play. Each **press *SKIPs*** a chapter (DVD) or track (Video CD/CD).

- **Pressing |◀◀ *SKIP*** once midway through a chapter/track returns to start of that chapter/track. Each additional press skips back one chapter/track.
- **Pressing *SKIP* ▶▶|** or **|◀◀** during play started from menu on Video CDs may recall menu.



■ Still Picture or Pause

Press *PAUSE/STILL* during play.

Press *PLAY* to release.

- **DVD/Video CD :** DECK will enter still picture mode.
- **CD :** DECK will enter pause mode.

■ Frame by Frame Picture (DVD/Video CD)

Press *PAUSE/STILL* in still mode.

Press *PLAY* to release.

- Each press advances picture one frame.
- Hold button down for consecutive frame advance.
- Whether pictures are advanced by "FRAME" or "FIELD" is selected automatically. (See p. 47)

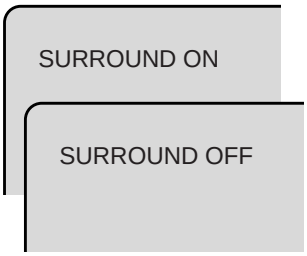
■ Slow Motion Picture (DVD/Video CD)

Press *FF/SLOW+* or ***REW/SLOW-*** in still mode.

Press *PLAY* to release.

- Slow motion speed, slow at first, is increased with each additional press of the button up to 5 levels.
- Reverse slow motion is not available for Video CDs.
- When ⃠ appears on the screen while a button is being operated, it means that the corresponding operation is prohibited by DECK or the disc.

Surround Sound System



Press *SURROUND* to set Surround sound.

To cancel, press *SURROUND*.

Notes

- Surround sound effects is available in DVD mode only.

Resume Function

DECK memorizes the point where STOP is pressed (▶ flashes on screen).

Press *PLAY* to resume play from this point. **Pressing *STOP*** again or opening the tray cancels RESUME, however, RESUME is not canceled when power is turned off and on.

- RESUME works only with discs for which elapsed play time is displayed during play.

Auto-Power Off Function

Power turns off after DECK has been in Stop mode (DVD) for about 5 minutes.

Enjoy Video CDs featuring playback control without using menus (Video CDs only)

1. Do steps 1-4 (previous page). When menu appears, **press *STOP***.
2. **Press *NUMBER keys*** to select desired track (play begins).
   - Check disc for track numbers.
   - Press "1" to start at beginning of disc.

To Resume Menu use,

Press *STOP* and **press *PLAY***, then MENU. Now, go to step 5 (previous page).

Notes

- Please read the disc jacket for operation information.
- If a single sided disc is placed in upside down, "PLEASE CHECK THE DISC, AND FOR STAINS OR SCRATCHES ON DISC" is displayed.
- Remove disc and press DECK POWER off when not in use.
- Disc continues to rotate with menu displayed even after play is done. Press STOP to clear menu display when finished with menu.

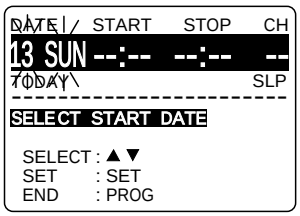
Timer Recording

Ready Checklist

- ☐ All connections are made (pp. 12 ~ 15).
- ☐ TV and DECK are plugged in.
- ☐ Clock set correctly.
- ☐ Tape has rec.tab. (p. 6)
- ☐ Remote is in VCR mode. (Press VCR.)
- ☐ Sufficient tape remaining for rec time.

1 **Press PROG***
to display Program.

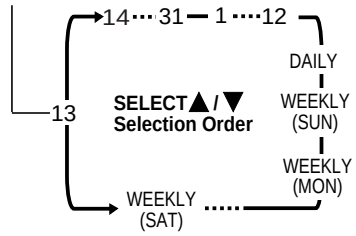
2



1) To set record DATE, press ▲▼ to select:
1~31= one time, or
DAILY= MON~ FRI, or
WEEKLY= same time each week and
press SET.

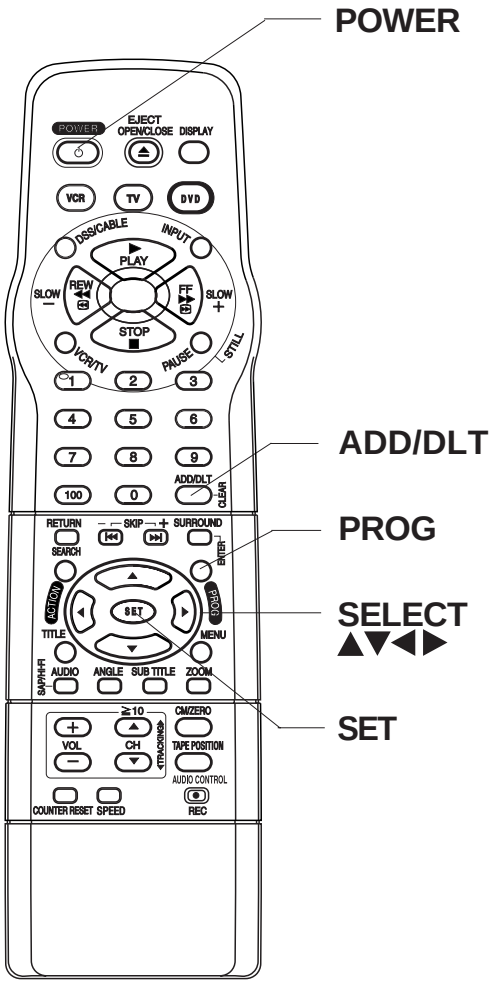
• See selection order left.

Example
Today

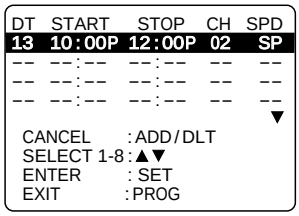


2) To set remaining items, press ▲▼
to select and
press SET
to set START/ STOP times, CH(channel) or LINE input (p. 35), and tape speed (SP, LP, SLP).

Press PROG
to end programming.

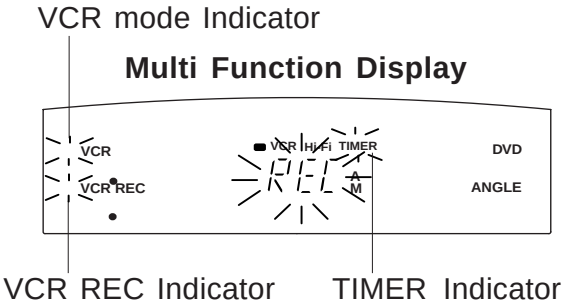


3



To Enter More Programs, press ▲▼
to select and
press SET
to set an unused program number, and then repeat step 2.

Or
Press PROG
to exit.



- The “Timer” Indicator lights up on DECK.
- You can do Timer Recording either power off or power on.
- **“TIMER REC WILL START SOON”** appears on-screen for 2 minutes before Timer Recording start. If DECK is in DVD mode, no message appears, but the VCR REC Indicator, the VCR mode indicator and “REC” will flash on Multi function Display.

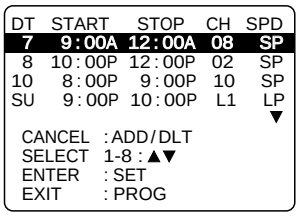
For assistance, please call : 1-800-211-PANA(7262) or send e-mail to : consumerproducts@panasonic.com

Review, Replace or Clear Program Contents:

(Recording is not in progress)

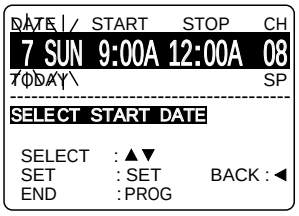
1 **Press PROG**
to display Program List.

2



Press ▲▼
to select number and
press SET
to display.

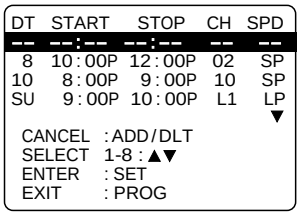
3 **To Replace program...**



Repeat Step 2 (p. 24)
to set new programs.

or

To Clear program...



Press ADD/DLT.

4 **Press PROG**
to end the program.

To cancel a Timer Recording in progress...

Hold down STOP on VCR mode for a few seconds to cancel the Timer Recording.
(The "TIMER" Indicator goes out on Multi Function Display.)

- Any future daily or weekly recording will be performed as programed.

Notes

- **If you are using Cable Box, the VCR's channel for Timer Recording must be set to the Cable Box output channel and Cable Box must be manually set to the desired channel. Cable Box power must be left on.**
- **2 minutes before Timer Recording is performed, "PLEASE PREPARE FOR TIMER REC" appears and Timer Indicator flashes.**
  Be sure a cassette with record tab is loaded and DECK is in Stop mode.
- If a power interruption occurs while programming the timer, the timer program(s) may be canceled. If "TIMER PROGRAMS WERE LOST DUE TO POWER INTERRUPTION" appears on-screen, please reenter the timer programs.
- If the start time for Timer Recording comes up during recording and playing back, Timer Recording will not be performed.

Important notes when using DSS Receiver

- When recording programs via DSS Receiver, DSS Receiver must be left on.
- When recording programs via an antenna or cable, DSS Receiver must be turned off.

Connection

Make the Audio/Video Connection as shown on pp. 12 ~ 15.

• You can use TV connected to a Stereo amplifier and speakers instead of Stereo TV.

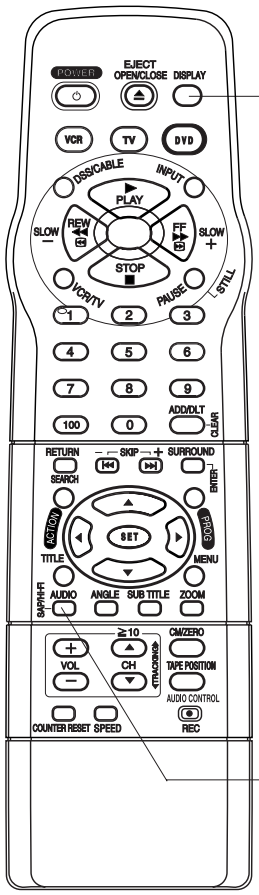
Receivable Broadcast Types

The following are possible audio broadcast types and on-screen displays.

The signal being received is indicated with an "((" mark while the selected audio mode is indicated with an arrow.

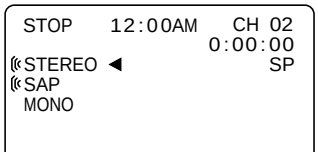
To display the broadcast signal being received,

➛ **press DISPLAY*** .



MTS Stereo and SAP broadcast

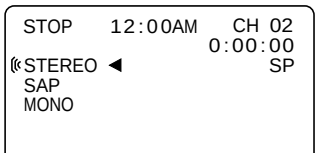
Multi-channel Television Sound Stereo (main language) and Secondary Audio Program (sub language) broadcasts are being received simultaneously.
Select STEREO or SAP audio mode.



MTS Stereo broadcast

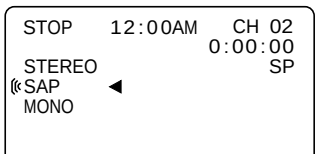
Multi-channel Television Sound Stereo broadcast. Select STEREO audio mode.

- If stereo broadcast is weak and display flickers, select MONO audio mode for possible better results.



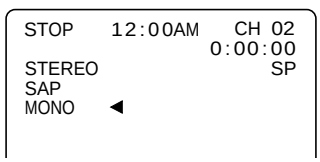
SAP broadcast

Secondary Audio Program (sub language) broadcast. Select SAP audio mode for the sub language.



MONO broadcast

Normal monaural sound broadcast.



Equipped with dbx®-TV Noise Reduction for true MTS reproduction. dbx®-TV Noise Reduction is required for good stereo separation and audio fidelity. dbx® is a registered trademark, and is licensed by dbx® Technology Licensing.

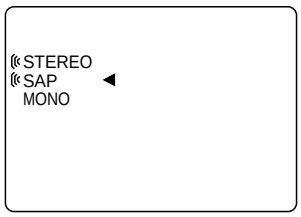
For assistance, please call : 1-800-211-PANA(7262) or send e-mail to : consumerproducts@panasonic.com

Audio Mode for Recording

1 **Press AUDIO (SAP/Hi-Fi)** to display audio mode.

(Display disappears after 5 seconds.)

2



Press AUDIO (SAP/Hi-Fi) repeatedly to select desired mode.

- Refer to “Receivable Broadcast Types” on p. 26.
- Arrow indicates selection.

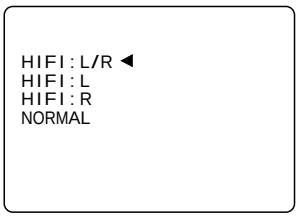
3 **Do a recording.**
See p. 21.

Audio Mode for Playback

1 **Start playback.**
See p. 20.

2 **Press AUDIO (SAP/Hi-Fi)** to display audio mode.

3



- Arrow indicates selection.

Press AUDIO (SAP/Hi-Fi) repeatedly to select desired mode.

- Select “HIFI (L/R)” or “HIFI (L)” or “HIFI (R)” to listen to stereo recordings in stereo sound.
  Select “NORMAL” for monaural sound.
- Display disappears after 5 seconds.

Notes

- Only tapes recorded in Hi-Fi stereo will playback with true stereo sound. Standard stereo tapes will playback in monaural sound.
- To listen to Hi-Fi stereo playback, the DECK AUDIO (L/R) jacks must be connected to a stereo TV or an external stereo amplifier and speakers. (See pp. 12, 14, 15.)
- If tracking is adjusted during playback, Hi-Fi audio may revert to normal audio.
- Hi-Fi and normal audio playback volume level may differ.

Multi-Brand Control Feature

Multi-Brand Control Setup

The Remote Control can be set to control some TV and Cable Box/DSS functions.

1 **Find your TV and Cable Box/DSS Receiver Brand Code Number on the following page.**

2

■ **Setup for TV control,**
➛ **hold down TV button**,
➛ **enter code with NUMBER keys**.

■ **Setup for Cable or DSS control,**
➛ **hold down DSS/CABLE button**,
➛ **enter code with NUMBER keys**.

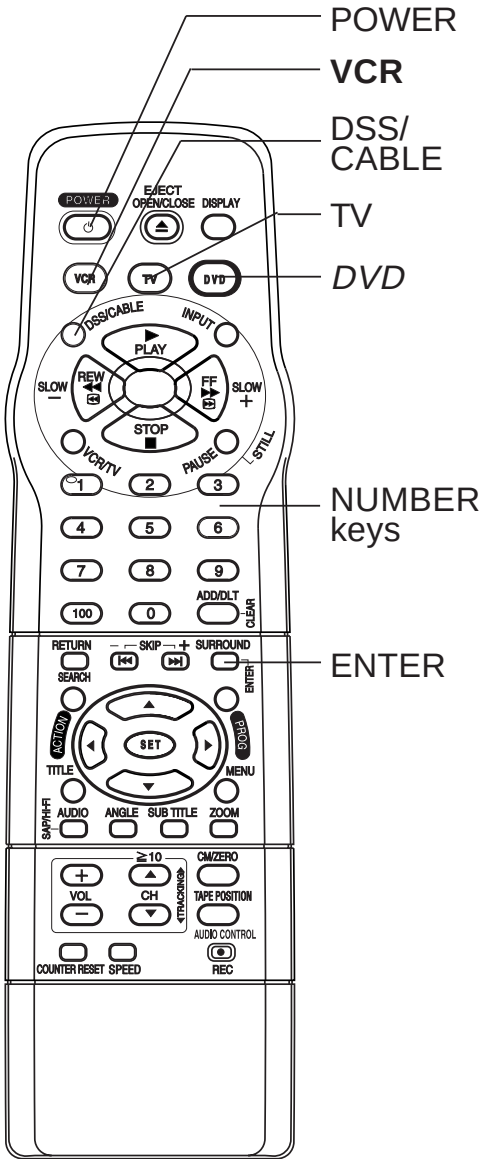
• If code number is 100 or greater,
➛ e.g., press 1 - 0 - 2 for 102.

3 **Confirm code entry,**
➛ **press POWER** to turn selected unit on or off.

• See table below for controllable functions in each mode.

Notes

- Repeat setup after remote battery replacement.
- Remote will not control every TV, Cable Box, or DSS made by the manufacturer listed. If you get no response, your particular unit cannot be controlled. There are NO additional codes for the products listed. If your product is not listed, then the remote is not compatible with that product.



Using Multi-Brand Control

After remote is set up, you can select VCR, DVD, TV, or DSS/CABLE for the desired function.

Press VCR, *DVD*, TV, or DSS/CABLE on the remote.
(Table below shows available remote buttons for each mode.)

Mode \ Unit	DVD/VCR	TV	CABLE/ DSS
DVD/VCR	All	VOL +/–	———
TV	**EJECT**/*OPEN/CLOSE**, ***DISPLAY***, ***PLAY***, ***STOP***, ***FF/SLOW+***, ***REW/SLOW-***, **VCR/TV**, **PAUSE/*STILL***, *SKIP*, ***AUDIO***, **CM/ZERO**, **TAPE POSITION**, **COUNTER RESET , SPEED, REC**	POWER, INPUT, NUMBER keys, ENTER, CH ▲/▼, VOL +/–	———
CABLE/ DSS		VOL +/-	POWER, ENTER, NUMBER keys (except 100key), CH ▲/▼

* **Bold: VCR Function**
Italic: DVD Function

Bold Italic: VCR and DVD Functions
Normal: TV, Cable Box or DSS Receiver

Notes

- Not all functions listed may be controllable.
- In TV or DSS/CABLE mode, it may be necessary to press ENTER after pressing NUMBER keys for channel selection.

For assistance, please call : 1-800-211-PANA(7262) or send e-mail to : consumerproducts@panasonic.com

TV Brand Code Numbers

Panasonic 01, 02
Quasar 01, 02
RCA 03
GE 03
Zenith 04
Magnavox 05
Sylvania 05
Sharp 06, 07
Sony 08
Toshiba 09
Sanyo 10
Fisher 10
JVC 11
Hitachi 12
Mitsubishi 07, 13
Samsung 14
Gold Star 15, 16, 17

Cable Box Brand Code Numbers

Archer 44, 06, 01, 120, 05, 63, 126
Cableview 29, 09, 01, 63, 120, 44, 42, 30 52, 04, 124, 126
Citizen 44, 52, 30, 63, 42, 04, 124, 126
Curtis 08, 09, 25, 61, 53, 87
Century 44, 51, 75, 59, 126
Cabletenna 29, 09, 01, 63, 120, 44, 126
Cable Cinema 29, 09, 01, 63, 120, 44, 126
Diamond 29, 09, 01, 63, 120, 44, 126
Eagle 62, 40, 22, 13, 58, 20, 26, 107
Eastern 28, 29, 130
Explorer 08, 09, 25, 61, 53, 87
Gemini 30, 04, 124
General Electric 01, 57, 120
General Instruments . 01, 84, 83, 34, 03, 02, 04, 55 65, 66, 67, 68, 120, 106, 121, 122, 115, 117, 118, 124
Gerrard 44, 51, 75, 59
GC Electronics 44, 42, 63, 29, 30, 52, 04 124, 126
Hamlin 41, 14, 15, 28, 102, 104, 103, 130
Hitachi 31
Jerrold 01, 84, 83, 34, 03, 02, 04, 55, 65, 66 67, 68, 120, 106, 121, 122, 115, 117, 118, 124
Jasco 30, 04, 124
Macom 31
Magnavox 26, 112
Matsushita 17, 16, 08, 87, 109
Movietime 32, 39, 42, 44, 126, 38, 40
Maestro 74, 35
NEC 40, 19, 38, 32
NSC 40, 19, 38, 32
Novavision 08, 09, 25, 61, 53, 87
Next Level 01, 84, 83, 34, 03, 02, 04, 55, 65 66, 67, 68, 120, 106, 121, 122
Oak 46, 11, 129, 101
Oak Sigma 46, 11, 129, 101
Panasonic 17, 16, 08, 87, 109
Philips 23, 24, 20, 13, 07, 50, 128, 129
Pioneer 06, 05, 12
Pulsar 04, 42, 63, 44, 30, 52, 124, 126
Quest 06, 05, 12
Radio Shack 44, 51, 75, 59, 126
RCA 17, 16, 08, 87, 109
Realistic 44, 51, 75, 59, 126
Recoton 44, 51, 75, 59, 126
Regal 41, 14, 15, 28, 102, 104, 103, 130
Regency 28, 29, 130
Rembrandt 44, 42, 63, 29, 01, 32, 39, 120, 126
Samsung 42, 06, 32, 05, 40
Scientific Atlanta 08, 09, 25, 61, 53, 87
Sheritech 27
Signal 26, 112
SL Marx 42, 06, 32, 40, 43, 44, 52, 63, 126
Sprucer 17, 16, 08, 87, 109
Standard Components 32, 39, 42, 44, 126
Stargate 04, 42, 32, 40, 63, 44, 30, 52, 06 124, 126
Sylvania 19, 18
Teknika 74, 35
Telecaption 77, 127
Teleview 40, 19, 38, 32, 42, 06
Texscan 19, 18
Tocom 34, 33, 01, 42, 66, 120
Toshiba 36
Unika 44, 42, 63, 29, 01, 126, 120
Universal 52, 43, 44, 63, 42, 126
Viewstar 62, 40, 22, 13, 58, 20, 26, 107
Videoway 07, 23, 50, 129
Vidtek 64
Zenith 07, 23, 50, 129

DSS Brand Code Numbers

Toshiba 90
Hitachi/ Hughes 91, 99
Primestar 92
Drake 93
Magnavox 94, 95
Uniden 94, 95
Optimus 94, 95
Panasonic 96
ProScan 97
RCA 97
SONY 98, 105

Important Notes

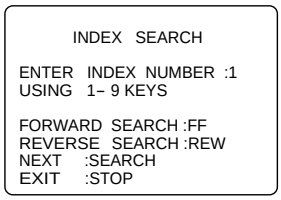
- Due to changes in infra-red commands used by manufacturers, some brands have several codes. If your unit does not respond to the first code, please try the next one.
- Some TV, Cable Box and DSS Receiver brands require you to turn on the power manually.

Search System

For each recording, an invisible index mark is placed on the tape. A program index and information are also included for timer recordings. These marks are used to access or scan recordings.

Index Search

1

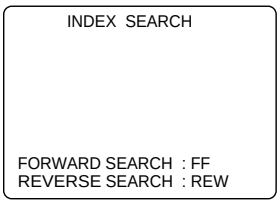


Press SEARCH* to display SEARCH in Stop or Play mode, and then **press NUMBER keys** to select recording number.

- To calculate number, see below.

Press FF/SLOW+ or **REW/SLOW-** on the remote to start search.

2



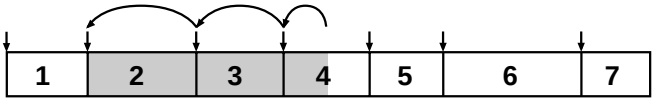
Play begins at search end.
To search forward or back 1 index, **press FF/SLOW+** or **REW/SLOW-** on the remote while screen left is displayed (10 sec.).

- To cancel, **press PLAY** or **STOP**.

To Calculate Index Number

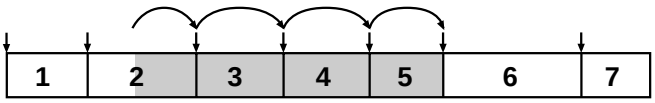
Example 1:

To go to rec. 2 from rec. 4, enter 3 and press REW.



Example 2:

To go to rec. 6 from rec. 2, enter 4 and press FF.



NOTE: ↓ indicates start points of each recording.

Note

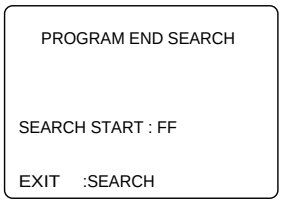
- If Index Search is started very close to an index mark, that index mark may not be counted in the search.

Program End Search

Locates end point of recording for continuity.

1 **Press SEARCH** twice to display SEARCH in Stop or Play mode.

2



Press FF/SLOW+ on the remote to start PROGRAM END SEARCH.

- To cancel, **press PLAY** or **STOP**.

Examples of **Program End Search**.

Fig. 1

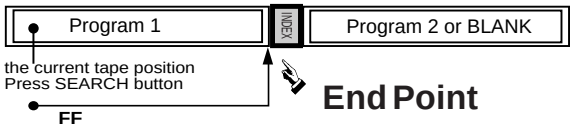


Fig. 2

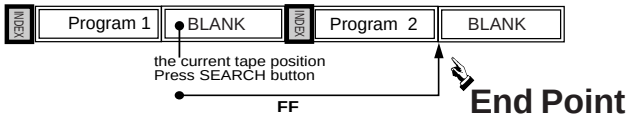
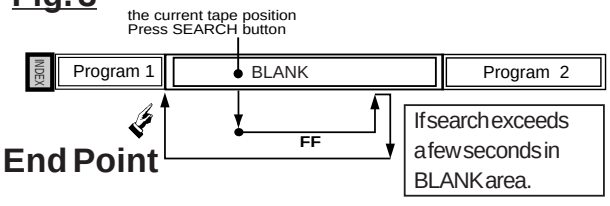


Fig. 3



Upon locating end point,

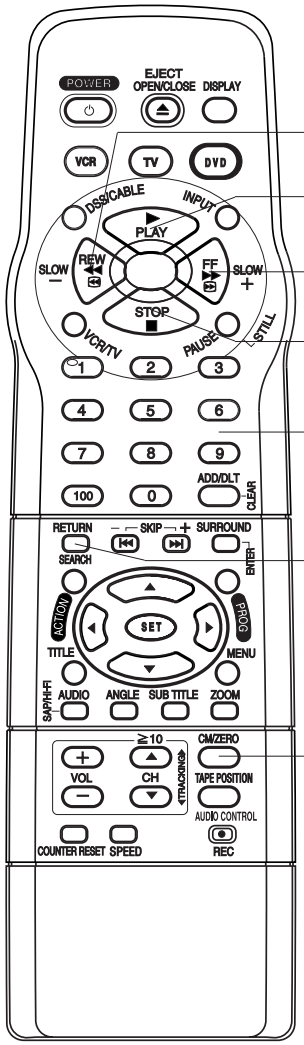
- ➔ search continues 7 sec. past end point,
- ➔ tape rewinds to 10 sec. before end point,
- ➔ tape plays to end point and stops.

Note

- If Program End Search is started very close to an index mark, that mark may be skipped over.

For assistance, please call : 1-800-211-PANA(7262) or send e-mail to : consumerproducts@panasonic.com

*__Important:__ If a remote control button does not work when pressed, press the VCR button on the remote and try the button again.



REW/SLOW-

PLAY

FF/SLOW+

STOP

NUMBER keys

SEARCH

CM/ZERO

Auto Operation Functions

■ Auto Play

Insert a tape ➛ Power comes on,
➛ Play starts if no record tab
(see p. 6).

■ Auto Rewind

Play
Fast Forward ➛ Tape end ➛ Rewind

■ Play Auto Eject

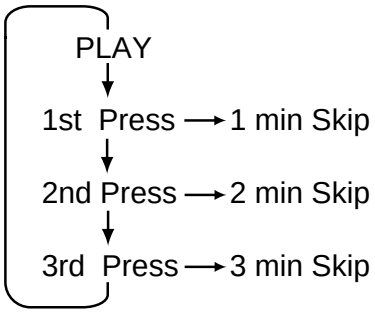
(Repeat Play must be off)
Play ➛ Tape end ➛ Rewind
➛ Tape ejects if no record tab

Commercial Skip

VCR fast forwards (skips) over 1~3 minutes of recorded tape.

1 **Press CM/ZERO** in Play mode.

- The skip time can be changed by pressing CM/ZERO repeatedly as shown by the figure below.



- No indication appears on-screen.

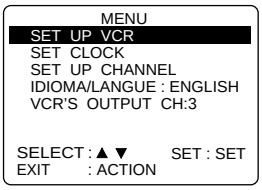
Tape Operation (continued)

Repeat Play

Set to playback a recording over and over.

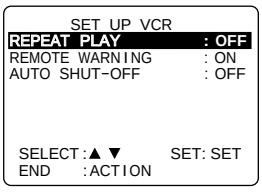
1 **Press ACTION*** to display MENU.

2



Press ▲▼ to select “SET UP VCR,” and **press SET**.

3



Press ▲▼ to select “REPEAT PLAY,” and **press SET** to set “ON” or “OFF.”

- Play repeats at tape end or if unrecorded portion over 30 sec. is detected.

4 **Press ACTION** twice to return to normal screen.

Note

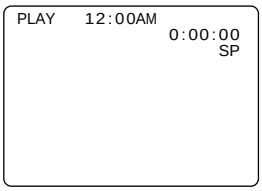
- For repeat play in DVD mode, see page 42.

Zero Search

To quickly return to a specified tape location.

1 **Press DISPLAY** during play to display Counter.

2

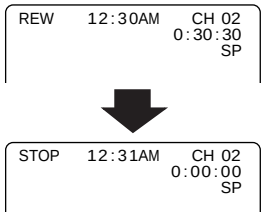


Press COUNTER RESET at desired position to reset to “0:00:00”.

3 Continue to record, playback etc**.**

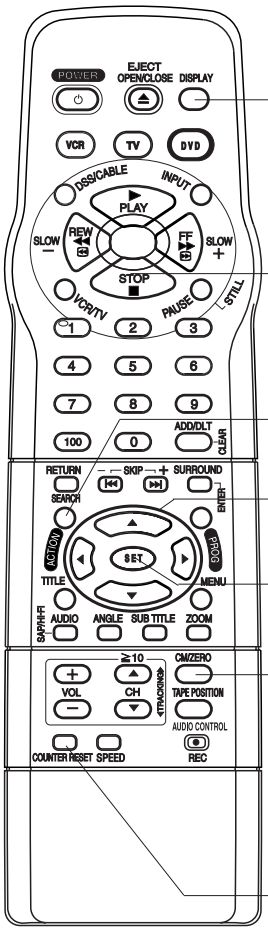
4 **Press STOP.**

5



Press CM/ZERO in Stop mode to start Zero Search.

- DECK will go into FF or REW mode and stop at the last point the Counter was set to 0:00:00.



DISPLAY

STOP

ACTION

SELECT ▲▼◀▶

SET

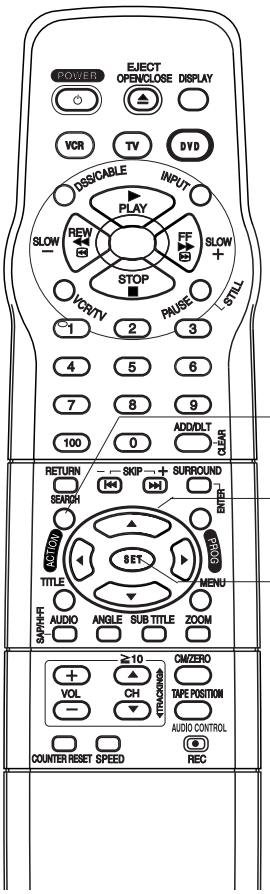
CM/ZERO

COUNTER RESET

For assistance, please call : 1-800-211-PANA(7262) or send e-mail to : consumerproducts@panasonic.com

Special VCR Features

***Important:** If a remote control button does not work when pressed, press the VCR button on the remote and try the button again.



VCR Lock Feature

When set to ON, all operations except for timer record and tape eject are prohibited. Useful for households with small children.

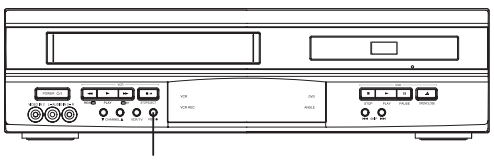
To turn on, hold down REC on DECK in Stop mode with no tape inserted for 7 seconds. (Please ignore "NO CASSETTE" warning.)

VCR LOCK ACTIVATED

To turn off, repeat above.

VCR LOCK OFF

- VCR Lock cancels in 24 hours if clock is set.



REC

Weak Signal Display Feature

When "ON," picture is displayed regardless of signal strength.

1 **Press ACTION** to display MENU.

2

MENU
SET UP VCR
SET CLOCK
SET UP CHANNEL
IDIOMA/LANGUE : ENGLISH
VCR'S OUTPUT CH:3
SELECT : ▲ ▼ SET : SET
EXIT : ACTION

Press ▲▼ to select "SET UP CHANNEL," and **press SET.**

3

SET UP CHANNEL
ANTENNA : CABLE
AUTO SET
WEAK SIGNAL DISPLAY:OFF
SELECT : ▲ ▼ SET: SET
EXIT : ACTION

Press ▲▼ to select "WEAK SIGNAL DISPLAY," and **press SET** to set "ON" or "OFF."

- ON: Picture is displayed regardless of signal condition, and may not always be clearly visible.
  OFF: Screen turns solid blue when signal is weak or non-existent.
- Selecting ON has no effect on connected equipment with blue back feature.

4 **Press ACTION** twice to return to normal screen.

Auto Shut-Off Feature

The power shuts off at a preset time.

1 **Press ACTION** to display MENU.

2

MENU
SET UP VCR
SET CLOCK
SET UP CHANNEL
IDIOMA/LANGUE : ENGLISH
VCR'S OUTPUT CH:3
SELECT : ▲ ▼ SET : SET
EXIT : ACTION

Press ▲▼ to select "SET UP VCR," and **press SET.**

3

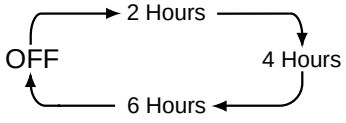
SET UP VCR
REPEAT PLAY : OFF
REMOTE WARNING : ON
AUTO SHUT-OFF : OFF
SELECT : ▲ ▼ SET: SET
EXIT : ACTION

Press ▲▼ to select "AUTO SHUT-OFF." **Press ▶** repeatedly to change shutoff time as shown below.

4 **Press ACTION** twice to return to normal screen.

Note

- The shut-off countdown will not function during Play or Record.



VCR Operation

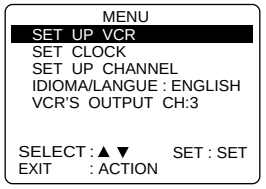
Special VCR Features (continued)

Remote Warning Feature

If Multi-brand feature is used (p. 28), and this feature is set to on, a warning appears whenever an invalid key is pressed in TV, DSS or CABLE mode.

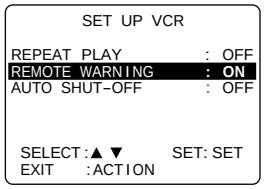
1 **Press ACTION*** to display MENU.

2



Press ▲▼ to select "SET UP VCR," and **press SET**.

3

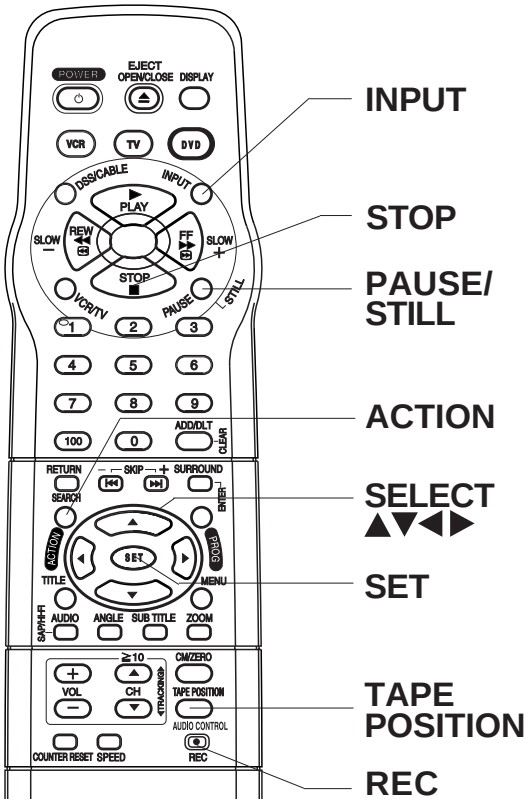


Press ▲▼ to select "REMOTE WARNING," and **press SET** to set "ON" or "OFF."

- If "OFF," remote warning will not appear when invalid key is pressed.

4 **Press ACTION** twice to return to normal screen.

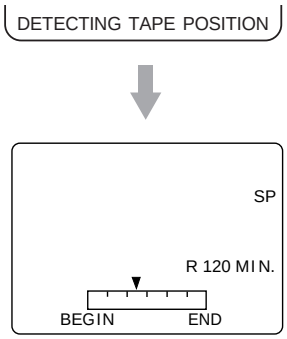
***Important:** If a remote control button does not work when pressed, press the VCR button on the remote and try the button again.



Tape Position and Tape Status Feature

To find out the present tape position and amount of tape remaining. **Tape position is displayed for VHS-C Cassettes type, tapes under 30 minutes, and some other tapes, but the position is not correct.**

1 **Press TAPE POSITION** to detect current tape position.



- "DETECTING TAPE POSITION" is displayed only when a cassette is first inserted, and it takes several seconds for correct tape position to appear.
- The present tape position indication and amount of tape remaining (according to tape speed) is displayed.
- Tape remaining time display may not be precise.

2 **Press TAPE POSITION** to return to normal screen.

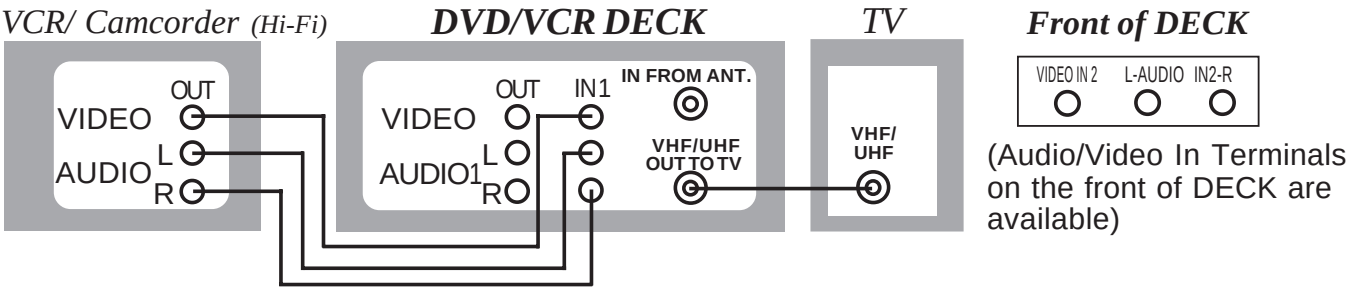
Note

This function cannot display exact amount of tape remaining for tapes 30 minutes or less, or for tapes over 120 minutes in length.

For assistance, please call : 1-800-211-PANA(7262) or send e-mail to : consumerproducts@panasonic.com

Copying Your Tapes (Dubbing)

Connection



Front of DECK

(Audio/Video In Terminals on the front of DECK are available)

① Connect VIDEO OUT terminal on Playing VCR to VIDEO IN terminal on DECK. To monitor the dubbing, also connect TV as shown.

② Connect "L" and "R" AUDIO OUT terminals on Playing VCR to "L" and "R" AUDIO IN terminals on DECK.
In place of Playing VCR, you can use other equipment, such as Camcorder. Simply connect the unit's Audio/Video outputs to DECK.

	Playing (Source) VCR	Recording (Editing) DECK
1	Insert a pre-recorded tape.	Insert a blank tape with record tab.
2	———	**Press INPUT** to set DECK Input mode to LINE for Video Input. (See "Selecting the Input Mode" below.)
3	**Press PLAY**, then **PAUSE/STILL** immediately to enter PLAY/PAUSE mode.	**Press REC**, then **PAUSE/STILL** immediately to enter REC/PAUSE mode.
	The operation of steps 4 and 5 must be done on both playing and recording VCRs at the same time.	
4	**Press PLAY** to start dubbing. Playing VCR starts playback.	**Press PAUSE/STILL** to start dubbing. DECK starts recording.
5	**Press STOP** to stop dubbing.	**Press STOP** to stop dubbing.

■ To Monitor Dubbing on TV

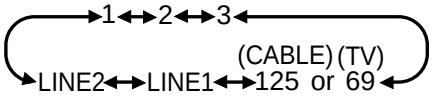
1 Turn TV on and tune to the Recording VCR channel (CH 3 or CH 4).

2 Set the VCR/TV Selector on DECK to "VCR."

■ Selecting the Input Mode

Method 1: **Press INPUT** repeatedly.
Channel Number ↔ LINE1 ↔ LINE2

Method 2: **Press CH ▲/▼.**
Display will change as below.



Note

- Dubbing tapes protected with Copy Guard will have poor quality results.
- "L1" or "L2" lights up on Multi Function Display (about 4 seconds) when LINE1 or LINE2 is selected.
- LINE1: For rear audio/video connection.
  LINE2: For front audio/video connection.

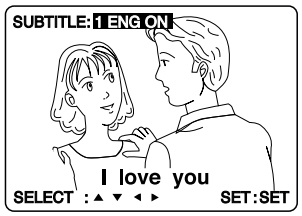
Caution:
- **Unauthorized exchanging and/or copying of copyrighted recordings may be copyright infringement.**
- **Please note that some tapes cannot be dubbed on DECK. Also, it is not possible to dub DVD/ Video CD/ CD to VHS tapes using DECK.**

Disc Operation

Subtitle Language (DVD only)

You can select a different subtitle language (if offered) than the one set at the Settings for DVD Operation.
(See p. 45.)

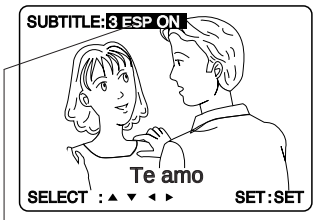
1



Press *SUB TITLE** in Play mode to display the subtitle selection on-screen.

- Display disappears after 5 seconds.
- When no subtitles are offered, "-" will be displayed instead of the language number.

2



Press ▲▼ to select a language.
Press ► (or ◄) to set.
Press ▲▼ to select "ON" or "OFF."

Number of subtitle language being played back.

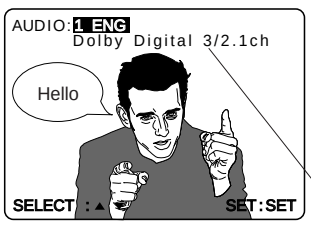
Notes

- If after several presses of the button the language does not change, language selection is not offered on the disc.
- When power is turned on again or disc is removed, subtitles revert to initial setting language. If the initial language is not recorded on the disc, the disc's priority language will appear.

Audio Soundtrack Language (DVD only)

You can change the audio soundtrack language, selected at the Settings for DVD Operation, to a different language if available. (See p. 45.)
(This operation works only with discs on which multiple audio soundtrack languages are recorded.)

1

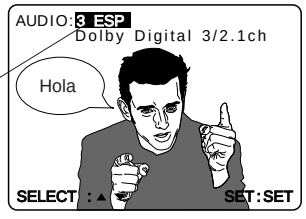


Press *AUDIO* in Play mode to display the audio selection on-screen.

- Display disappears after 5 seconds.

Audio attribute 1 type, sampling frequency, bit No. of the disc.

2



Press ▲▼ to select desired language.

Number of the audio soundtrack language being played back.

Ready Checklist

☐ Please read "Basic DVD Operation" on p. 22.

[Subtitle language (No.)]
[Audio sound track language (No.)]

ENG	English
FRA	French
DEU	German
ITA	Italian
ESP	Spanish
NLD	Dutch
SVE	Swedish
NOR	Norwegian
DAN	Danish
POR	Portuguese
RUS	Russian
JPN	Japanese
CHI	Chinese
KOR	Korean
MAL	Malay
VIE	Vietnamese
THA	Thai
✻	Other

- Change the No. by **pressing ▲▼**, and **press *SET***.

[Audio attribute 1 type, sampling frequency, bit No. of the disc (see p. 46.)**]**

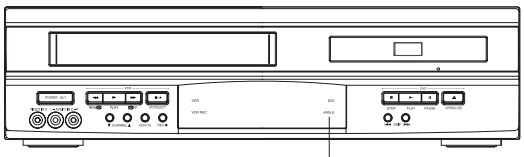
LPCM	**96KHz or 48KHz**	**16bit**	**Linear PCM disc**
		20bit	
		24bit	
Dolby Digital	**1ch - 5.1ch**		**Dolby Digital disc**
DTS	**1ch - 5.1ch**		**DTS disc**

Notes

- If, after several presses of the button the language does not change, language selection is not offered on the disc.
- When power is turned on again or disc is removed, language reverts to initial setting. If this language is not recorded on the disc, the language recorded will be heard.

For assistance, please call : 1-800-211-PANA(7262) or send e-mail to : consumerproducts@panasonic.com

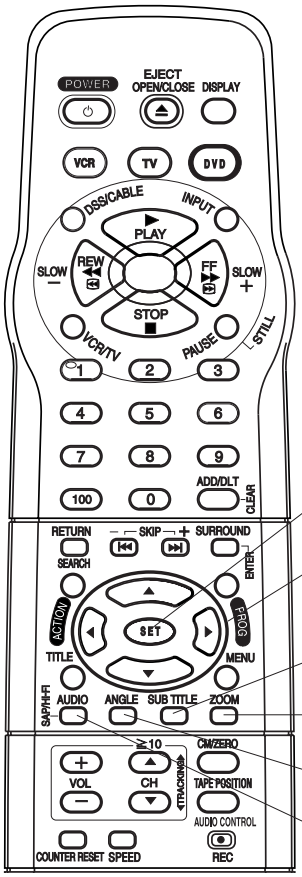
When ⃠ appears on the screen while a button is being operated, it means that the corresponding operation is prohibited by DECK or the disc.



ANGLE Indicator

Notes

- The ANGLE Indicator lights up on DECK when a scene recorded at different angles is detected.
- The angle number can be set beforehand so that the angle is switched whenever the ANGLE Indicator lights up.



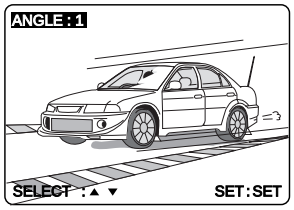
SET
SELECT ▲▼◀▶
SUB TITLE
ZOOM
ANGLE
AUDIO

Notes

- The subtitle cannot be enlarged nor can it's position be changed.
- The picture zoom feature does not work with a Video CD.
- During picture zoom, "ZOOM1" or "ZOOM2" is displayed on-screen.
- Zooming, on some discs, may result in poor picture quality, or not operate.

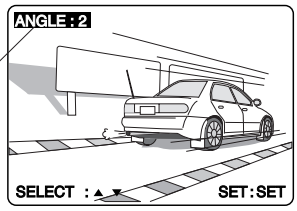
Multiple Angle Viewing (DVD only)

DVDs may contain scenes shot from multiple camera angles allowing the same scene to be viewed at different angles. You can view these angles, if available, using the ANGLE button.

1 

Press *ANGLE* in Play mode to display the angle selection on-screen.

- Display disappears after 5 seconds.

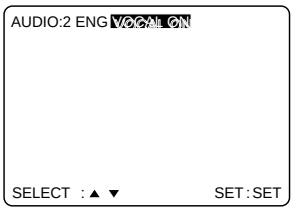
2 

Press ▲▼ to select the desired angle.

Number of angle being played back.

Vocal Selection for Karaoke Discs (DVD/Video CD)

1 **Press *AUDIO*** in Play mode to display the audio screen.

2 

Press ▲▼ (or ◀▶) to select as shown below, and **press ▶** (or ◀) to set. (DVD only)

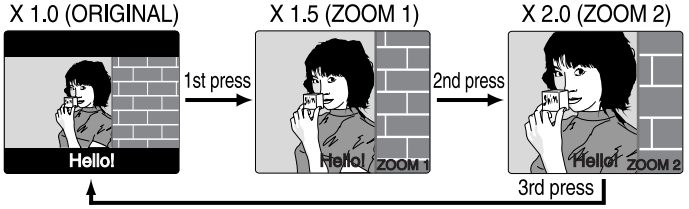
- DVD Karaoke (1 vocal) VOCAL ON ↔ VOCAL OFF
- DVD Karaoke (2 vocals) VOCAL V1 + V2 → VOCAL V1 → VOCAL V2 → VOCAL OFF
- Video CD LR → L → R

Picture Zoom (DVD only)

You can enlarge specific portions of a picture and select the zoom ratio using the ZOOM button during DVD playback.

Press *ZOOM* repeatedly to change display as follows.

- You can enlarge the center portion of the image to one of 2 magnifications.



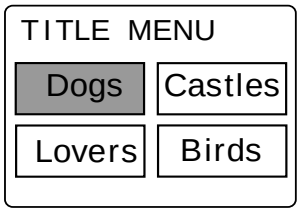
■ Use the ▲, ▼, ◀ and ▶ buttons to move the position up, down, left and right.

Disc Operation (continued)

Title Menu (DVD only)

Some DVDs have more than one title, e.g. movies.
If the disc offers a title menu, you can select the desired title number. (Operation may vary according to the disc.)

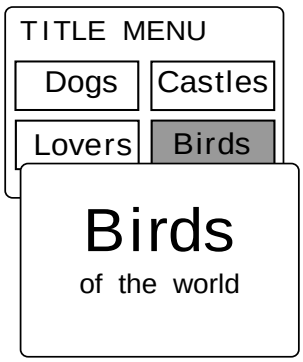
1



<Example>

Press *TITLE** in Play mode to display the title screen.

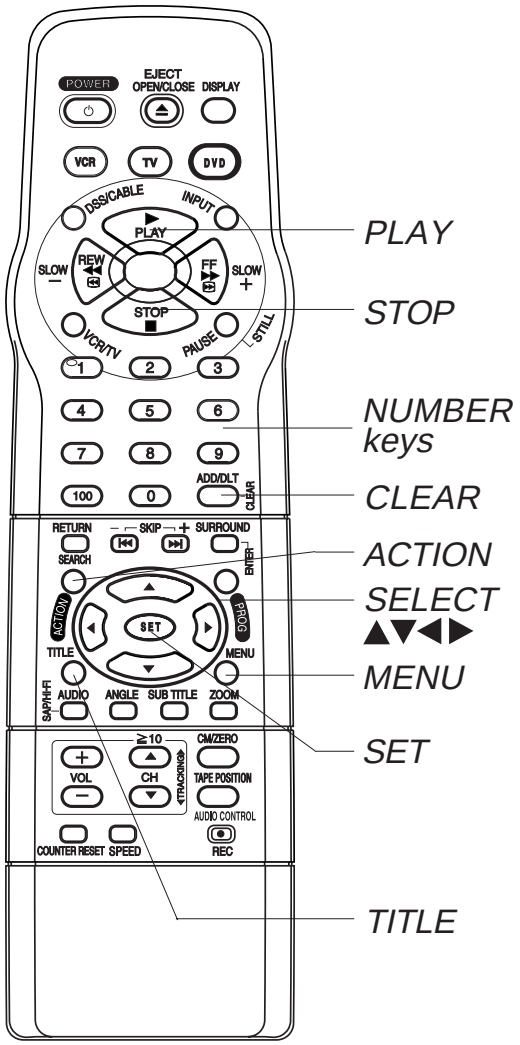
2



<Example>

Press ▲▼◀▶ or *NUMBER keys* to select a title, and **press *SET*** or ***PLAY*** to start playing.

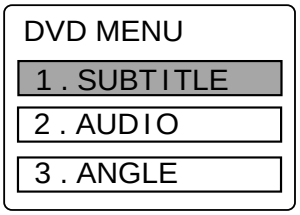
- "Press *SET* or *PLAY*" not necessary when using *NUMBER keys.*



DVD Menu (DVD only)

DVDs may offer a special menu. This menu may include guides to unique contents, audio/subtitle languages, etc. Although contents and operation may vary, the following steps show basic steps for using the menu.

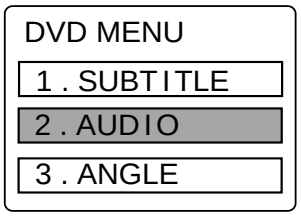
1



<Example>

Press *MENU* in Play mode to display DVD MENU.

2



<Example>

Press ▲▼◀▶ or *NUMBER keys* to select an item, and **press *SET*** or ***PLAY*** to perform.

- "Press *SET* or *PLAY*" not necessary when using *NUMBER keys.*

Repeat step 2 if more than one menu.

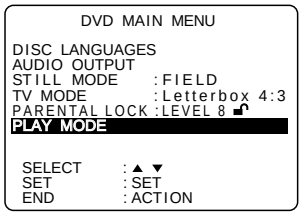
For assistance, please call : 1-800-211-PANA(7262) or send e-mail to : consumerproducts@panasonic.com

Program Play (Video CD/CD)

You can program specific tracks and order of play.

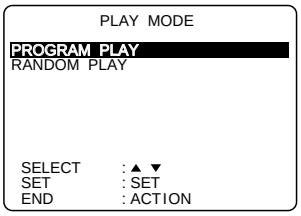
1 **Press *ACTION*** to display MENU.

2



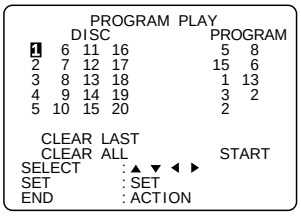
Press ▲▼ to select "PLAY MODE," and **press *SET*** to display.

3



Press ▲▼ to select "PROGRAM PLAY," and **press *SET*** to display.

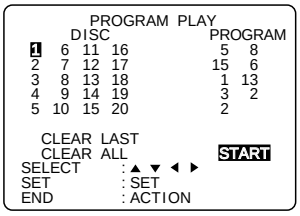
4



Press ▲▼◄► to select a track number (Track numbers on disc are displayed.), and **press *SET***.

- Repeat step 4 to select another track.
- The selected track is added on the right side.

5



Press ▲▼◄► to select "START," and **press *SET*** to start play of programs in the sequence selected.

- To cancel, **press *STOP*** during play, then **press *CLEAR***.

Notes

- Up to 15 tracks can be programmed.
- "◄ " or " ►" (depending on disc) indicates additional PROGRAM PLAY screen. Press ▲▼◄► for next or previous screen.
- **To clear the last program one by one** Press ▲▼◄► to move to "CLEAR LAST" and press *SET*. (Pressing *CLEAR* on remote control also clears last program.)
- **To clear all programs** Press ▲▼◄► to move to "CLEAR ALL" and press *SET*. (Programs are also cleared when the power is turned off or the disc is removed.)

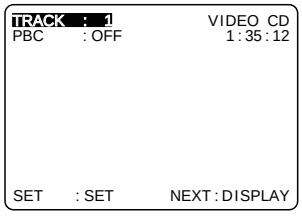
Ready Checklist

- ☐ DECK is in DVD mode, press DVD.
- ☐ Video CD or CD is inserted.

Program Repeat Play (Video CD/CD)

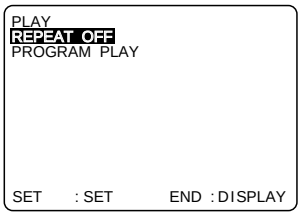
1 Do operation steps **1** through **5** at left on this page.

2 **Press *DISPLAY*** to display Disc Information screen. (Disc Information Screen)

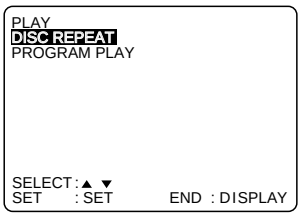


3 **Press *DISPLAY*** to display DECK Information screen.

4 **Press *SET*** to enter Select mode. "REPEAT OFF" will flash. (DECK Information Screen)



5 **Press ▲▼** to select "DISC REPEAT." (DECK Information Screen)



6 **Press *SET*** to set mode. ("DISC REPEAT" will stop flashing.) To cancel, select "REPEAT OFF" in step 5, then **press *SET***.

DVD Operation

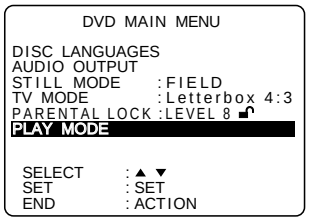
Disc Operation (continued)

Random Play (Video CD/CD)

Tracks are played in a random order.

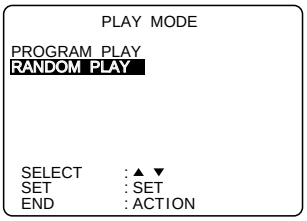
1 **Press *ACTION**** to display MENU.

2



Pess ▲▼ to select "PLAY MODE," and **press *SET*** to display.

3



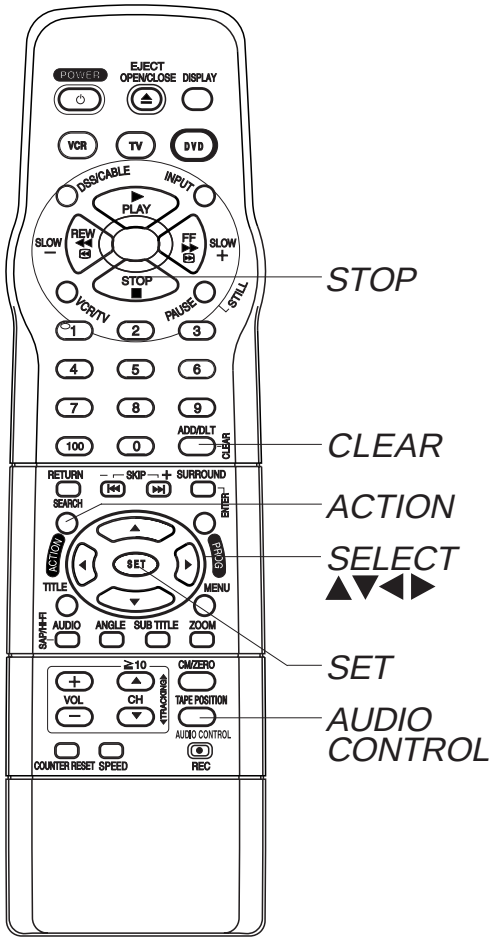
Press ▲▼ to select "RANDOM PLAY," and **press *SET*** to begin random play.

- To cancel, **press *STOP*** during play, then **press *CLEAR***.

Ready Checklist

☐ DECK is in DVD mode, press DVD.

***Important**:
If a remote control button does not work when pressed, press the DVD button on the remote and try the button again.



Setting the Dolby Digital Sound Output Level

Of the types of audio recorded on a DVD, Dolby Digital incorporates a dynamic range of sound. This means that, when compared to a music CD, etc., the average volume is generally lower. This unit can be set so that the Dolby Digital average volume is increased automatically allowing you to hear both Dolby Digital and music CD sound at the same volume level.

Press *AUDIO CONTROL* repeatedly to change "ON" ↔ "OFF."

- "ON" or "OFF" lights up on Multi Function Display (about 3 seconds) when press AUDIO CONTROL.

	Digital Output level "OFF"	Digital Output level "ON"
DVD Dolby Digital sound	Volume level is low.	Volume level becomes the same as a music CD, etc.
Video CD/Music CD	———	———

- "ON" is set ..... When Dolby Digital sound is played back, the average volume is increased so that you hear the same volume level as with a music CD.
- "OFF" is set ..... The volume level recorded on the disk is played back just as it is.

Notes

- When audio equipment is connected, setting the Digital Output level to "OFF" is recommended.
- If the sound becomes abnormal while playing a disk, set the Digital Output level to "OFF."

For assistance, please call : 1-800-211-PANA(7262) or send e-mail to : consumerproducts@panasonic.com

DVD Operation using On-Screen Displays

When *DISPLAY* is pressed, On-Screen Displays show disc information (title/chapter/track number, elapsed playing time) and DECK information (repeat play, play mode).

Ready Checklist

☐ DECK is in DVD mode, press DVD.

1 **Press *DISPLAY*** in Play or Stop mode to display "On-Screen Displays."

- Each **press** of ***DISPLAY*** changes on-screen display as follows. (refer to p. 42 or 43.)

Selected disc information
↓
Selected DECK information
↓
Normal Screen

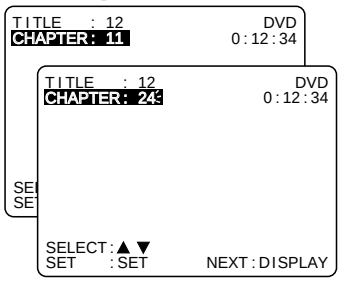
Note

DISPLAY button does not function while DVD TITLE MENU is displayed.

2 **Press ▲▼** (or ◀▶) to select an item, and **press *SET***.

3 **Press ▲▼** to select the setting, and **press *SET***.

<Example of DVD>



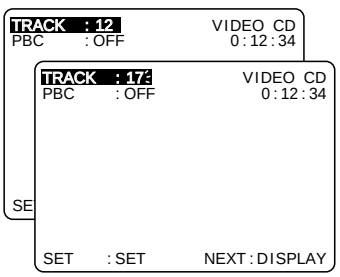
- For some functions the setting will be registered immediately without pressing *SET*.
- When numbers are displayed (e.g. title number), *NUMBER keys* are also available.

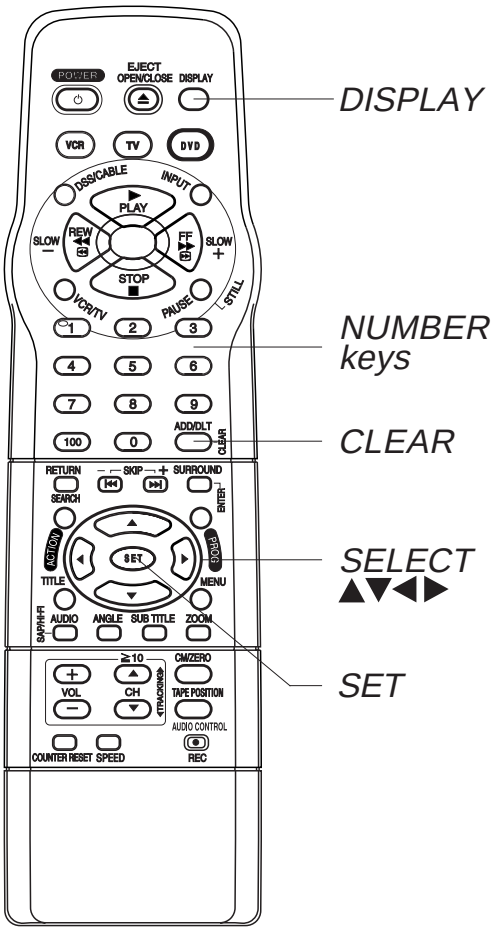
To make corrections, press ▲▼ and *SET* repeatedly to move to error, then correct.

- Pressing ▶ is effective for elapsing time instead of the above buttons. **Press ◀** repeatedly to delete the error, then correct.

To return to normal screen, press *CLEAR* or ***DISPLAY*** repeatedly.

<Example of Video CD>





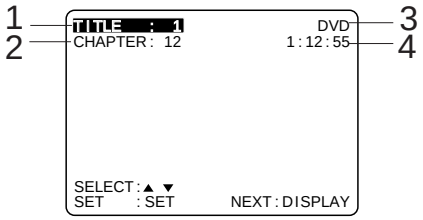
Notes

- When *DISPLAY* button is pressed during playback of a Video CD with Playback control, *NUMBER keys* are not available on the displayed screen. In this case, press *DISPLAY* again to remove the displayed screen.
- When ⃠ appears on the screen while a button is being operated, it means that the corresponding operation is prohibited by DECK or the disc.

DVD Operation

Detailed Descriptions of each On-Screen Display

■ Disc information screen (for DVD)



1. TITLE No.
- Change the No. by **pressing ▲▼*** or ***NUMBER keys***, and **press *SET***.

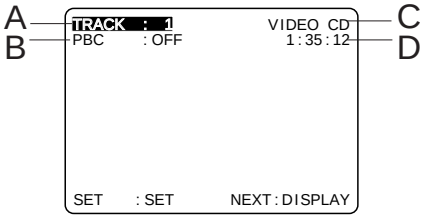
2. Chapter No.
- Change the No. by **pressing ▲▼** or ***NUMBER keys***, and **press *SET***.

3. Disc currently being played

4. Elapsed playing time

The screen may be changed by selecting the elapsed time.
- Change the elapsed time by **pressing *NUMBER keys***.
  e.g., press 0 - 1 - 2 - 3 - 4 - 5 for 01 : 23 : 45.
- This function does not work with some discs.

■ Disc information screen (for Video CD/ CD)



A. Track No.
- Change the No. by **pressing ▲▼** or ***NUMBER keys***, and **press *SET***.

B. Playback control ON/OFF

[Video CD with playback control only]

ON	Video CD menu play is displayed.
OFF	Video CD menu play is cleared.

C. Disc currently being played

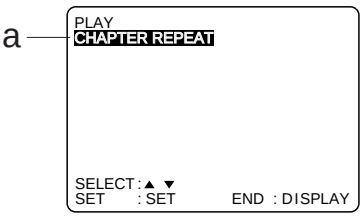
Video CD	CD

D. Elapsed playing time

Note
- Track No. and the elapsed playing time are not displayed during play started from menu of Video CDs with playback control.
- When ⃠ appears on the screen while a button is being operated, it means that the corresponding operation is prohibited by DECK or the disc.

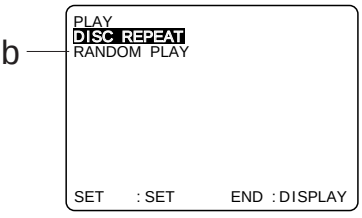
■ DECK information screen (for DECK)

- Change the desired mode during play by **pressing ▲▼**, and **press *SET***.



a. Repeat Play

DVD	CHAPTER REPEAT	TITLE REPEAT	REPEAT OFF
Video CD/CD	TRACK REPEAT	DISC REPEA	REPEAT OFF

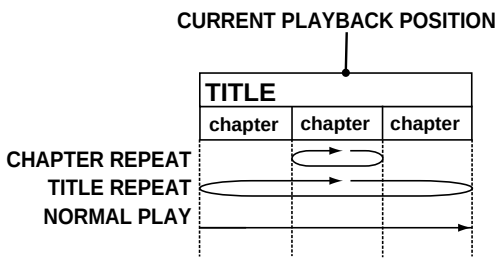


b. Play mode [Video CD/ CD only] (See p. 39 or 40.)

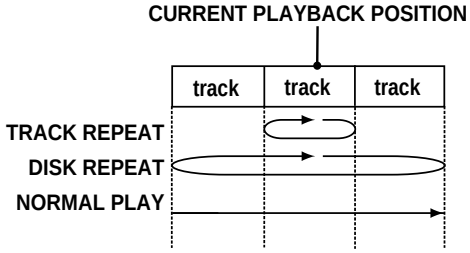
PROGRAM PLAY	program play
RANDOM PLAY	random play
– – – –	normal play

For your reference

• CHAPTER/TITLE REPEAT PLAY (DVD)



• TRACK/DISC REPEAT PLAY (Video CD/CD)



Note
- For repeat play in VCR mode, see p. 32.

For assistance, please call : 1-800-211-PANA(7262) or send e-mail to : consumerproducts@panasonic.com

MP3 Playback Operation

*Important: If a remote control button does not work when pressed, press the DVD button on the remote and try the button again.

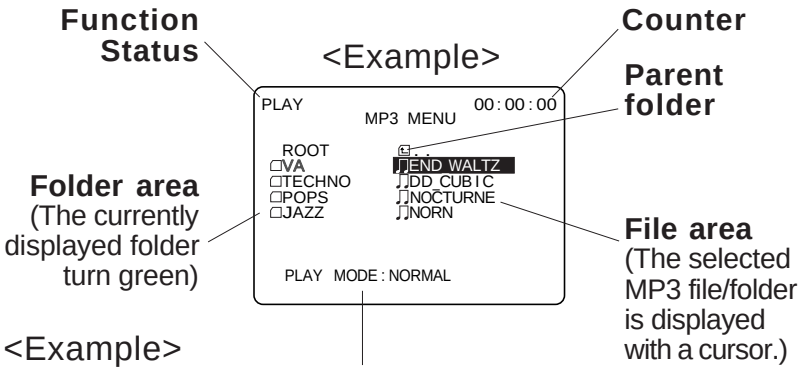
MP3 Playback

You can use this unit to play MP3 format audio recorded for personal use with a computer etc. onto a CD-R or CD-RW. Play may not be possible in some cases due to the condition of the recording.

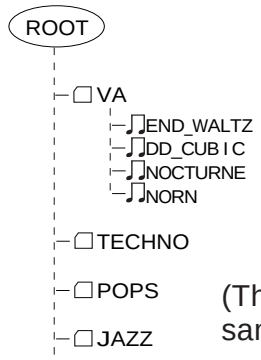
1 **Press *POWER*** on the remote or DECK.

2 **Press *OPEN/CLOSE*,** and then place a MP3 disc into the disc tray.
Press *OPEN/CLOSE* to close.

3 Display MP3 MENU and start playing automatically. (The MP3 CD layer is displayed.)



<Example>



♫ : **MP3 file**
▢ : **Folder**
▢ : **Parent folder**

(The disc layer composition of the sample OSD above is displayed.)

■ **Forward/Reverse Search**
Press *FF/SLOW+* or ***REW/SLOW-*** during play.
Press *PLAY* to release.
- Search speed, slow at first, increases with each additional press of the button up to 4 levels.

■ **Forward/Reverse Track Skip**
Press *SKIP* ▶▶| or **|◀◀ *SKIP*** during play.
Each press skips a track.
- If pressed within first 3 seconds of playback, skips to the previous track. If over 3 seconds, returns to first of that track. (**|◀◀ *SKIP*** only.)
- Only the ***SKIP* ▶▶|** or **|◀◀ *SKIP*** button can be used for track skip selection during playback.
Place unit into Stop mode before performing folder/ file selection (see above right.)

4 **Press *STOP*** to stop playing.

5 **Press *OPEN/CLOSE*** to eject the disc.
The MP3 MENU is closed automatically.

■ **MP3 playback** (During STOP mode)
1) **Press ▲▼** to select an MP3 file (♫).
2) **Press *SET*** or ***PLAY*** to start playback.

■ **Select folder** (During STOP mode)
1) **Press ▲▼** to select a folder (▢).
2) **Press *SET*** displays files/folders contained in the folder.

■ **Select parent folder** (During STOP mode)
1) **Press ▲▼** to select a folder (▢).
2) **Press *SET*** changes to the previous layer display.

Note

- Folder area operation cannot be done. Only file area operation is possible.

■ **Select PLAY MODE** (During STOP mode)
1) **Press ◀▶** moves the cursor to PLAY MODE.
2) **Press ▲▼** to select the desired PLAY MODE (see below).

[PLAY MODE]

NORMAL:
All MP3 files are selected and played back one time only.

SINGLE REPEAT:
The selected MP3 file is played back repeatedly.

FOLDER REPEAT:
The MP3 files contained in the selected folder are played back repeatedly.
However, folders below the selected folder are not played back.

DISC REPEAT:
All MP3 files are played back repeatedly.

DVD Operation

DVD Lock Feature

***Important:** If a remote control button does not work when pressed, press the DVD button on the remote and try the button again.

You can prevent playback of DVDs in a specific rating level which may be unsuitable for children.

- Some DVDs are encoded with a rating level. If the disc rating is higher (stricter) than the one you preset, playback will be prohibited.

Ready Checklist

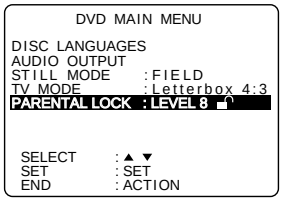
☐ DECK is in DVD mode, press DVD.

DVD Lock (DVD only)

A 4-digit code must be entered to view a blocked program or change rating settings.

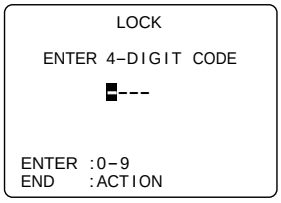
1 **Press *ACTION**** to display MENU.

2



Press ▲▼ to select "PARENTAL LOCK," and **press *SET*** to display.

3

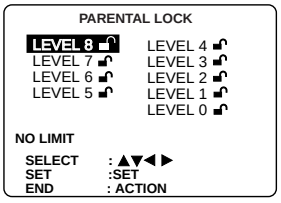


1) **Press *NUMBER keys*** to enter your secret code.
2) Enter same secret code again for confirmation.
3) **Press *SET*** to display.

To Make Corrections
Press ◀ repeatedly to move the cursor.
Press *NUMBER keys* to make the correction.

- Step 2) not necessary when changing rating or secret code.
- Take care that you are not observed entering the secret code.

4



Press ▲▼◀ ▶ to select rating level, and **press *SET*** to select "LOCKED" or "UNLOCKED."

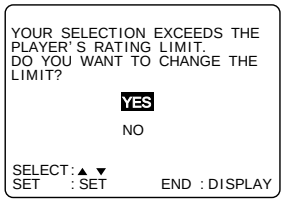
LEVEL 0 : LOCK ALL, Playback of all DVDs, CDs and Video CDs is prohibited.
(Use to prohibit play of mature theme DVDs not encoded with rating level.)
LEVEL 1 : mature theme DVDs
LEVEL 2 : DVDs expressly for children can be played back.
LEVEL 3 to 7 : DVDs for general audiences/children can be played back. (DVDs with mature content are prohibited.)
LEVEL 8 : NO LIMIT: (Factory preset)
All DVDs can be played back.

5 **Press *ACTION*** twice to end setup.

Caution

Discs not encoded with rating level will play even if the jacket states it is for mature audiences. For these discs, the DVD Lock Ratings will not work.

<When DVD Lock is activated>



After DVD Lock is set and a blocked DVD is played, this message will appear.
The message may differ depending on the disc.

To continue viewing a blocked program for now,
Press ▲▼ to select "YES" and SET. Then, enter your 4 digit secret code. When "NO" is selected, blocked programs cannot be viewed.

Change your secret code

- You will need your current code. Do step 1 ~ 2 left.
  Enter current secret code.
  Press *CLEAR* to clear the code.
  Do step 4 to enter new code.

Note

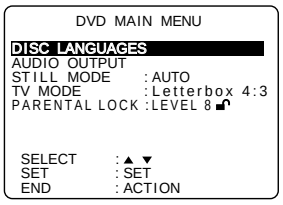
- DO NOT forget your secret code.

For assistance, please call : 1-800-211-PANA(7262) or send e-mail to : consumerproducts@panasonic.com

Settings for DVD Operation

1 **Press *ACTION*** in Stop mode to display MENU.

2



Press ▲▼ to select an item, and **press *SET***.

DISC LANGUAGES (See below)
All languages offered on the disc can be set. If the language not offered is set, the original disc language will be selected.

AUDIO OUTPUT (See p. 46.)
You can set the audio output that comes from the digital audio output terminal.

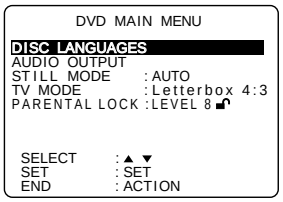
STILL MODE (See p. 47.)
To select "FIELD" (Field still) or "FRAME" (Frame still) to prevent jitter or make small text or fine patterns clearly visible in a still picture. When "AUTO" is set "FIELD" or "FRAME" is selected automatically.

TV MODE (See p. 47.)
To select whether the video material for a wide-screen will be played back in the Pan & Scan style, Letterbox style or 16 : 9 style.

Disc Languages (DVD only)

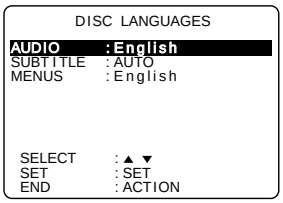
To select and set the language of the audio soundtrack, subtitles, or title/DVD menus for all discs to be played.

3



Press ▲▼ to select "DISC LANGUAGES," and **press *SET*** to display screen.

4



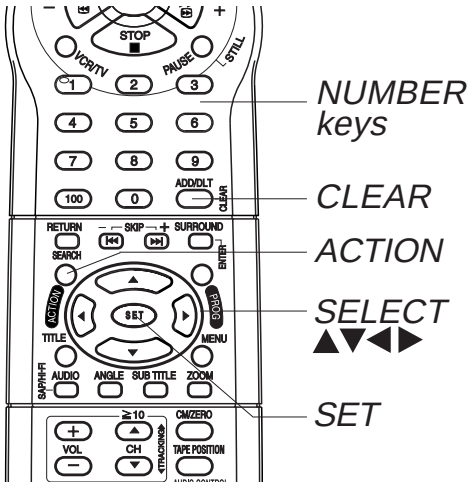
Press ▲▼ to select an item, and **press *SET*** repeatedly for desired language. (Please refer right.)

5 **Press *ACTION*** to redisplay DVD menu and go to step 2 to setup another item. Or, **press *ACTION*** twice to exit.

Once initial settings are done, they remain in memory (even after power off) until changed. This means DECK will always operate under the same conditions (especially DVDs) each time.

Ready Checklist

☐ DECK is in DVD mode, press DVD.



"AUDIO" selections

(Factory preset: English)
To select the audio soundtrack language.
English/Spanish/French/Japanese
Original: Original disc language
OTHER ✱✱✱✱: Other language selection*1

"SUBTITLE" selections

(Factory preset: AUTO)
To select the subtitle language.
AUTO: Same language selected for "AUDIO"

- If language set for "AUDIO" is used in playback, subtitles will not appear.
- If another language is used during playback, the subtitles will appear in the language selected at "AUDIO" setup.

English/Spanish/French/Japanese
OTHER ✱✱✱✱: Other language selection*1

"MENUS" selections

(factory preset: English)
To select the language used in title menus or DVD menus.
English/Spanish/French/Japanese
OTHER ✱✱✱✱: Other language selection*1

To enter OTHER ✱✱✱✱ code number,

Press *NUMBER keys* (Please refer to language codes on p. 48).
To make corrections, **press ◀** repeatedly to delete language code number, and correct.

*1 If the selected language is not offered, the original disc language is selected.

DVD Operation

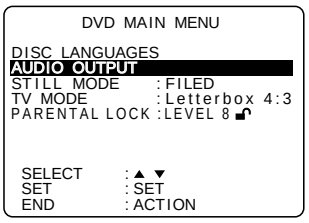
Settings for DVD Operation (continued)

Audio Output

Select the digital output to be output from the optical digital audio output connector of DECK.

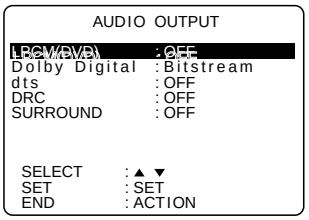
1 **Press *ACTION**** in Stop mode to display MENU.

2



Press ▲▼ to select "AUDIO OUTPUT," and **press *SET*** to display screen.

3



Press ▲▼ to select an item, and **press *SET*** repeatedly for output. (See below.)

■ "LPCM (DVD)" selections

OFF: Linear PCM of less than 48 kHz/16 bit is output. When playing DVDs recorded in linear PCM of over 48 kHz/20 bit or 96 kHz, no digital audio is output. (Factory preset)

PCM: When playing DVDs recorded in linear PCM of 48 kHz/20 bit/24 bit or 96 kHz, digital audio converted to 48 kHz/16 bit is output. (Digital output of PCM audio is restricted to 48 kHz/16 bit or below for copyright protection.)

■ "Dolby Digital" selections

Bitstream: Dolby Digital bitstream (1ch-5.1ch) is output. (Factory preset)

OFF: No output.

■ "dts" selections

Bitstream: dts bitstream is output. (Factory preset)

OFF: No output.

■ "DRC (Dynamic Range Compression)" selections

OFF: Normal audio range is selected. (Factory preset)

ON: For dynamic sound even at low volume, this is useful for late-night listening. [Dolby Digital DVDs only].

■ "SURROUND" selections

Surround Sound creates the effect of sound coming from non-existent rear speakers even when only connected to a 2-channel stereo system.

OFF: No Surround Sound effect. (Factory preset)

ON: Surround Sound effect.

4 **Press *ACTION*** to redisplay DVD menu and go to step 2 to setup another item. Or, **press *ACTION*** twice to exit.

☑ Ready Checklist

☐ DECK is in DVD mode, press DVD.

Type of amplifier to be connected	Recommended setting		
	LPCM (DVD)	Dolby Digital	dts
No amplifier is connected	OFF	OFF	OFF
AV amplifier (with digital audio input connector) without Dolby Digital/dts decoder	PCM*1	OFF*2	OFF*2
AV amplifier including Dolby Digital decoder	PCM*1	Bitstream	OFF
AV amplifier including Dolby Digital/dts decoder	PCM*1	Bitstream	Bitstream*3

- Make settings according to amplifier connected to optical audio output as shown in above table.
- When a dts decoder is not connected, to enjoy dts DVD, please select audio output other than dts at the dts DVD menu screen. Otherwise, there will be no sound.

*1 Audio Output 2 from DECK is converted to 48 kHz/16 bit in addition to audio from digital audio output.
To enjoy high quality sound at 48 kHz/20 bit /24 bit or 96 kHz, connect the amplifier or decoder directly to the Audio Output 2 connectors, not to the Digital Audio Output connector. [Select "OFF" at the "LPCM (DVD)".]

*2 When connecting an amplifier (with an optical digital input connector) which does not contain the Dolby Digital or dts decoder, be sure to select "OFF".
If "Bitstream" is selected, starting DVD play may cause such a high level of noise as to be harmful to your ears and damage the speakers.

*3 When a dts decoder is connected, please select "Bitstream" in "dts". If "OFF" is selected, there will be no sound.

Notes

- Turn off other surround effects when using this surround effect.
- For optimum effect, the distance between DECK and the listener should be about 3 or 4 times the distance between the right and left front speakers.

For assistance, please call : 1-800-211-PANA(7262) or send e-mail to : consumerproducts@panasonic.com

*__Important:__ If a remote control button does not work when pressed, press the DVD button on the remote and try the button again.

Still Mode

Set to reduce jitter in a displayed still picture or a motion picture.

1 **Press *ACTION*** in Stop mode to display MENU.

2

DVD MAIN MENU
DISC LANGUAGES
AUDIO OUTPUT
STILL MODE :FIELD
TV MODE :Letterbox 4:3
PARENTAL LOCK :LEVEL 8
SELECT : ▲ ▼
SET : SET
END : ACTION

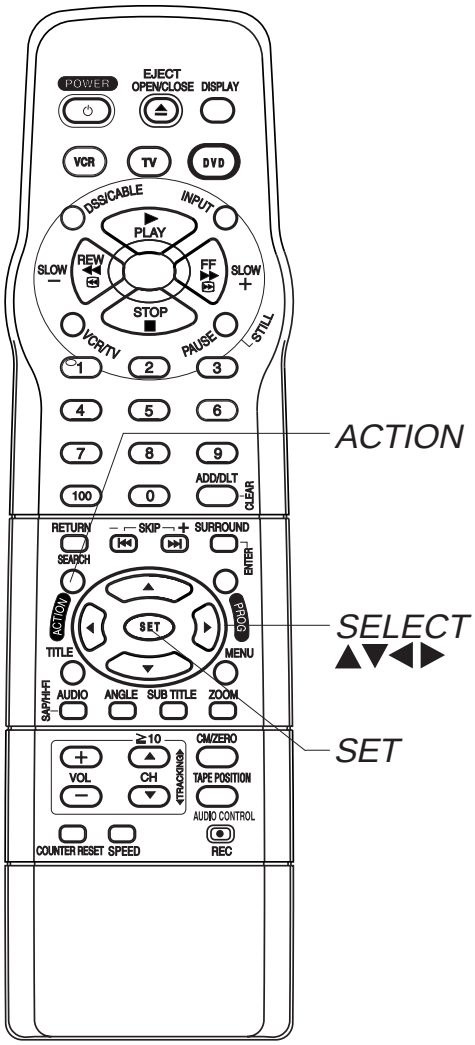
Press ▲▼ to select "STILL MODE," and **press *SET*** repeatedly for mode. (See below.)

AUTO: "FIELD" (Field still) or "FRAME" (Frame still) is automatically selected during the still mode. (Factory preset)

FIELD: "FIELD" (Field still) is always selected. This setting will reduce jitter when compared with "AUTO" on some discs.

FRAME: "FRAME" (Frame still) is always selected. Some texts and fine patterns will be seen clearly when compared with "AUTO" on some discs.

3 **Press ACTION** to exit this mode.



TV Mode

Set the screen display style for wide-screen video material playback.

1 **Press *ACTION*** in Stop mode to display MENU.

2

DVD MAIN MENU
DISC LANGUAGES
AUDIO OUTPUT
STILL MODE :FILED
TV MODE :Letterbox 4:3
PARENTAL LOCK :LEVEL 8
SELECT : ▲ ▼
SET : SET
END : ACTION

Press ▲▼ to select "TV MODE," and **press *SET*** repeatedly for mode. (See below.)

Pan & Scan 4 : 3 (Factory preset) :
Wide-screen video data is played in Pan & Scan style (left and right of screen is trimmed.)
- Video data not formatted in Pan & Scan will play in letterbox style.

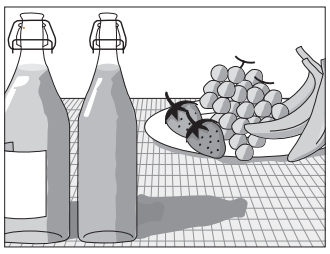
Letterbox 4 : 3 :
Wide-screen video data is played in Letterbox style (top and bottom of screen has black margin).

16 : 9 :
Set "16: 9" when using Wide-screen TV.

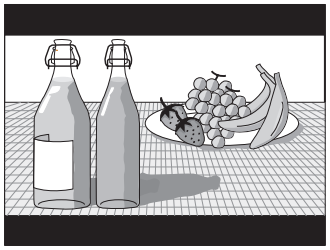
3 **Press *ACTION*** to exit this mode.

Example

- Pan & Scan (Factory preset)



- Letterbox



DVD Operation

Language Code List

Enter the appropriate code number for the initial settings “AUDIO”, “SUBTITLE” and/or “MENUS” (see p. 45).

Code	Language
6565	Afar
6566	Abkhazian
6570	Afrikaans
6577	Ameharic
6582	Arabic
6583	Assamese
6588	Aymara
6590	Azerbaijani
6665	Bashkir
6669	Byelorussian
6671	Bulgarian
6672	Bihari
6678	Bengali; Bangla
6679	Tibetan
6682	Breton
6765	Catalan
6779	Corsican
6783	Czech
6789	Welsh
6865	Danish
6869	German
6890	Bhutani
6976	Greek
6978	English
6979	Esperanto
6983	Spanish
6984	Estonian
6985	Basque
7065	Persian
7073	Finnish
7074	Fiji

Code	Language
7079	Faroese
7082	French
7089	Frisian
7165	Irish
7168	Scots Gaelic
7176	Galician
7178	Guarani
7185	Gujarati
7265	Hausa
7273	Hindi
7282	Croatian
7285	Hungarian
7289	Armenian
7365	Interlingua
7378	Indonesian
7383	Icelandic
7384	Italian
7387	Hebrew
7465	Japanese
7473	Yiddish
7487	Javanese
7565	Georgian
7575	Kazakh
7576	Greenlandic
7577	Cambodian
7578	Kannada
7579	Korean
7583	Kashmiri
7585	Kurdish
7589	Kirghiz
7665	Latin

Code	Language
7678	Lingala
7679	Laothian
7684	Lithuanian
7686	Latvian, Lettish
7771	Malagasy
7773	Maori
7775	Macedonian
7776	Malayalam
7778	Mongolian
7779	Moldavian
7782	Marathi
7783	Malay
7784	Maltese
7789	Burmese
7865	Nauru
7869	Nepali
7876	Dutch
7879	Norwegian
7982	Oriya
8065	Panjabi
8076	Polish
8083	Pashto, Pushto
8084	Portuguese
8185	Quechua
8277	Rhaeto-Romance
8279	Romanian
8285	Russian
8365	Sanskrit
8368	Sindhi
8372	Serbo-Croatian
8373	Singhalese

Code	Language
8375	Slovak
8376	Slovenian
8377	Samoan
8378	Shona
8379	Somali
8381	Albanian
8382	Serbian
8385	Sundanese
8386	Swedish
8387	Swahili
8465	Tamil
8469	Telugu
8471	Tajik
8472	Thai
8473	Tigrinya
8475	Turkmen
8476	Tagalog
8479	Tonga
8482	Turkish
8484	Tatar
8487	Twi
8575	Ukrainian
8582	Urdu
8590	Uzbek
8673	Vietnamese
8679	Volapük
8779	Wolof
8872	Xhosa
8979	Yoruba
9072	Chinese
9085	Zulu

For assistance, please call : 1-800-211-PANA(7262) or send e-mail to : consumerproducts@panasonic.com

Warning and Instruction Displays

These displays will alert you to a missed operation or provide further instructions.

OSD	Caution	Page
PLEASE SET CLOCK BY PRESSING ACTION KEY	If you attempt to set or review a Timer Recording and the Clock is not set...	18
PLEASE PREPARE FOR TIMER REC	If DECK is not in Stop mode or a cassette with record tab is not inserted 2 minutes before a Timer Recording is about to begin...	24 25
CHECK CASSETTE RECORD TAB	If you press REC on the remote control or DECK, and a cassette is inserted with no record tab...	6
NO CASSETTE	If you press PLAY, FF, REW, or REC on the remote control or DECK without a cassette inserted...	20 21
TO CANCEL TIMER REC HOLD DOWN STOP KEY FOR APPROX 3 SEC	If you press STOP or POWER during a Timer Recording... (visible in VCR mode only)	25
VIDEO HEADS MAY NEED CLEANING PLEASE INSERT HEAD CLEANING CASSETTE OR REFER TO MANUAL	If head cleaning becomes necessary while playing back a tape...	6
VCR LOCK ACTIVATED	If you press a function button other than STOP/EJECT or POWER while DECK is in VCR Lock mode...	33
REMOTE CONTROL IS SET TO CABLE/DSS MODE USE VCR : VCR KEY USE DVD : DVD KEY	If you press an invalid key on the remote while in CABLE/DSS mode...	28 29 34
REMOTE CONTROL IS SET TO TV MODE USE VCR : VCR KEY USE DVD : DVD KEY	If you press an invalid key on the remote while in TV mode...	28 29 34
PLEASE CHECK THE DISC, AND FOR STAINS OR SCRATCHES ON DISC	If you press PLAY, or DECK reads data from a stained or scratched disc in DVD mode. Also, if the type of disc is other than DVD, Video CD or CD...	4
IT IS PROHIBITED TO COPY DVD/VIDEO CD/CD TO VHS	If you press REC in DVD mode...	21

Before Requesting Service

Check the following points if you are having trouble with your DECK.

Power	Correction
No power…	• Completely insert Power Plug into an AC outlet. • Set POWER button to on. • Make sure power source is active.
Power turns itself off...	• Auto power-off (shutoff) occurs after about 5 min. in DVD mode with no operation, or if there is no broadcast signal in TV or Playback mode. Turn the power back on. (pp. 23, 33)
Recording & Playback	**Correction**
TV program cannot be recorded...	• Check connections between DECK, external antenna, and TV. • Check channel selections. • Make sure your antenna system (CABLE or TV) is correctly set. (Channels [p. 18]) • Make sure cassette record tab is intact. (p. 6)
Timer recording cannot be performed…	• Confirm that clock is set to current time and date. • Make sure Cable/DSS box (if used) is left on and tuned to channel to be recorded. • Set recording start/stop times correctly. (p. 24) • Timer recording may not be performed or continued if a power interruption occurs before or during a Timer Recording, even after power is restored.
There is no playback picture, or the playback picture is noisy or contains streaks...	• Select channel 3 or 4 on TV to match VCR output channel (3 or 4) (p. 16) or select LINE. • Set VCR/TV selector to “VCR.” • Adjust TRACKING control in either direction. (p. 6) • Try Head Cleaning. (p. 6)
Special effects playback, picture may contain some vertical jitter when using a TV with an Automatic Vertical Hold Control...	• Set TV’s Vertical Hold Control to MANUAL, then adjust.
DECK cannot be controlled...	• Make sure DECK power is on. • Check Remote batteries. • Make sure VCR LOCK is set to off. (p. 33) • Make sure Remote is in proper mode.(p. 28) • Make sure Timer Record is not in progress.
Remote Control	**Correction**
DECK cannot be remote controlled...	• Make sure DECK power is on. • Make sure Remote is in VCR mode. • Aim Remote Control directly at remote sensor on DECK. • Avoid any object blocking signal path. • Check Remote batteries. (p. 4) • Exposing DECK remote sensor to direct fluorescent or outdoor light may cause signal interference.
ACTION and PROG buttons do not respond...	• These buttons are not available in COMPONENT Video Output and S-VIDEO OUT. Set TV to either RF IN or VIDEO IN. (p. 10) • Check Remote batteries. (p. 4) • Press VCR or DVD button for DVD/VCR mode. (p. 28)

For assistance, please call : 1-800-211-PANA(7262) or send e-mail to : consumerproducts@panasonic.com

Check the following points if you are having trouble with your DECK.

DVD/ Video CD/ CD	Correction
Play fails to start even when PLAY is pressed...	• This DECK cannot play discs other than DVDs, Video CDs and CDs. • The disc may be dirty and require cleaning.
Play starts but then stops immediately...	• Be sure disc is installed with label side up.
Picture is distorted during rapid advance or rapid reverse...	• The picture will be somewhat distorted at times: this is normal.
No Forward/Reverse Scene Search play...	• Some discs may have sections which prohibit Forward/Reverse Scene Search. (p. 23)
Play does not start even when title is selected...	• Confirm the “DVD LOCK” setting. (p. 44)
Audio soundtrack and/or subtitle language is not the one selected at the initial settings...	• If the audio soundtrack and/or subtitle language selected at DVD initial settings does not exist on the disc, it will not be accessible.
No subtitles...	• Subtitles appear only when available on disc. • “OFF” is selected at the changing subtitle language. Select “ON” at the “Changing Subtitle Languages” setion (p. 36) to display the subtitles.
Alternative audio soundtrack (or subtitle) language cannot be selected...	• Alternative language cannot be selected with discs which do not contain more than one language. • For some discs, alternative language cannot be selected with the AUDIO or SUB TITLE button. Try selecting it from the DVD MENU if available.
Angle cannot be changed...	• This function is dependent on software availability. Even if disc has multiple angles, they may be recorded for specific scenes only (ANGLE indicator on DECK lights up). (p. 37)
Miscellaneous	**Correction**
Programs cannot be viewed on TV...	• Make sure TV is set to output of DECK. • Check connections between DECK, external antenna, and TV. • Set VCR/TV selector to “TV.” (p. 21) • Make sure proper signal source is selected.
Video cassette cannot be inserted...	• Insert the cassette with window side up; record tab facing you.
Video cassette ejects when a recording is started or the power is turned off for timer recording...	• Make sure cassette record tab is intact. (p. 6)
In Stop mode, the motor (CYLINDER) continues to rotate...	• To enable Quick play mechanism, the cylinder will rotate for about 3 minutes. This reduces response time from Stop to Play mode.
The disc cannot be removed..	• First, unplug DECK. Then, prepare a rigid wire (e.g. an extended paper clip) and, applying moderate force, insert it straight into the hole at the base of the tray. The tray will eject a little. Now, pull the tray all the way out and remove the disc. (p. 9)

If you cannot resolve the problem, please call the Customer Call Center for product assistance at 1-800-211-PANA (7262).
To locate an authorized servicenter, please call toll free 1-800-211-PANA (7262).
or send e-mail to : consumerproducts@panasonic.com

Servicenter List

For Product Information, Operating Assistance, Literature Request, Dealer Locations, and all Customer Service inquiries please contact:
1-800-211-PANA (7262), Monday-Friday 9am-9pm Saturday-Sunday 9am-7pm, EST. or send e-mail to : consumerproducts@panasonic.com

Web Site: http://www.panasonic.com
You can purchase parts, accessories or locate your nearest servicenter by visiting our Web Site.

Accessory Purchases:

Customer Orders Only 800-332-5368 (Customer Orders Only)
Panasonic Services Company 20421 84th Avenue South, Kent, WA 98032
(6 am to 5 pm Monday - Friday; 6 am to 10:30 am Saturday; PST)
(Visa, MasterCard, Discover Card, American Express, Check)

Factory Servicenters Locations

CALIFORNIA
6550 Katella Avenue
Cypress, CA 90630

800 Dubuque Avenue
S. San Francisco,
CA 94080

3878 Ruffin Road
Suite A
San Diego, CA 92123

FLORIDA
3700 North 29th Avenue
Suite 102
Hollywood, FL 33020

GEORGIA
8655 Roswell Road
Suite 100
Atlanta, GA 30350

ILLINOIS
1709 North Randall Road
Elgin, IL 60123

MASSACHUSETTS
60 Glacier Drive
Suite G
Westwood, MA 02090

MINNESOTA
7850-12th Avenue South
Airport Business Center
Bloomington, MN 55425

OHIO
2236 Waycross Road
Civic Center Plaza
Forest Park, OH 45240

PENNSYLVANIA
2221 Cabot Blvd. West
Suite B
Langhorne, PA 19047

TEXAS
13615 Welch Road
Suite 101
Farmers Branch,
TX 75244

WASHINGTON
20425-84th Avenue
South
Kent, WA 98032

HAWAII
99-859 Iwaiwa Street
Aiea, Hawaii 96701
Phone (808)488-1996
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Service in Puerto Rico
Matsushita Electric of Puerto rico, Inc. Panasonic Sales Company/ Factory Servicenter:
Ave. 65 de Infantería, Km. 9.5, San Gabriel Industrial Park, Carolina, Puerto Rico 00985
Phone (787)750-4300 Fax (787)768-2910

As of Sep. 2001

Limited Warranty

Panasonic Consumer Electronics Company,
Division of Matsushita Electric Corporation
of America, One Panasonic Way
Secaucus, New Jersey 07094

Panasonic Sales Company,
Division of Matsushita Electric of Puerto Rico, Inc.
AVE. 65 de Infantería, Km. 9.5 San Gabriel
Industrial Park, Carolina, Puerto Rico 00985

PANASONIC/QUASAR Video Products
Limited Warranty

Panasonic Consumer Electronics Company or Panasonic Sales Company (collectively referred to as "the Warrantor") will repair or replace this product with new or refurbished parts or equivalent product, free of charge, in the USA or Puerto Rico, in the event of a defect in materials or workmanship as follows (all time periods commence from the date of the original purchase):

PRODUCT	PARTS	LABOR	SERVICE	CONTACT NUMBER
CAMCORDER	ONE (1) YEAR, EXCEPT CCD IMAGE SENSOR CCD IMAGE SENSOR - SIX (6) MONTHS	NINETY (90) DAYS NINETY (90) DAYS	Carry-In or Mail-In	1-800-211-PANA(7262)
DVD/VCR DECK	ONE (1) YEAR	NINETY (90) DAYS	Carry-In or Mail-In	1-800-211-PANA(7262)
DIGITAL STILL CAMERA	ONE (1) YEAR, EXCEPT CCD IMAGE SENSOR CCD IMAGE SENSOR - SIX (6) MONTHS	NINETY (90) DAYS NINETY (90) DAYS	Carry-In or Mail-In	1-800-272-7033
A/V MIXER	ONE (1) YEAR	NINETY (90) DAYS	Carry-In or Mail-In	1-800-211-PANA(7262)
TV/VCR, TV/DVD TV/DVD/VCR COMBINATION	ONE (1) YEAR, EXCEPT CRT CRT - TWO (2) YEARS	NINETY (90) DAYS CRT - NINETY (90) DAYS	Carry-In: 21" CRT and Smaller In-Home or Carry-In: 22" CRT and Larger	1-800-211-PANA(7262)
TV/HDR COMBINATION	ONE (1) YEAR, EXCEPT CRT CRT - TWO (2) YEARS	NINETY (90) DAYS CRT - NINETY (90) DAYS	In-Home or Carry-In	1-888-843-9788

Batteries (if included) - New rechargeable batteries in exchange for defective rechargeable batteries for ten (10) days. Non-rechargeable batteries are not warranted.

Tape (if included) - New video cassette tape in exchange for a defective video cassette tape for five (5) days.

Memory cards (if included) - Exchange defective item for new one for ninety (90) days.

In-home, carry-in or mail-in service, as applicable, in the USA can be obtained during the warranty period by contacting a Panasonic Services Company (PASC) Factory Servicenter listed in the Servicenter Directory. Or call toll free contact number listed above, to locate an authorized PASC Servicenter. Carry-in or mail-in service in Puerto Rico can be obtained during the warranty period by calling the Panasonic Sales Company telephone number listed in the Servicenter Directory.

This warranty is extended only to the original purchaser. A purchase receipt or other proof of the date of the original purchase is requires before warranty service is rendered.

This warranty only covers failures due to defects in materials and workmanship, which occur during normal use and does not cover normal maintenance, including, but not limited to, video and audio head cleaning. The warranty does not cover damage which occurs in shipment, or failures which are caused by products not supplied by the warrantor, or failures which result from accident, misuse, abuse, neglect, mishandling, misapplication, alteration, modification, faulty installation, set-up adjustments, improper antenna, inadequate signal pickup, maladjustment of consumer controls, improper operation, power line surge, improper voltage supply, lightning damage, commercial use such as hotel, office, restaurant, or other business or rental use of the product, or service by anyone other than a PASC Factory Servicenter or a PASC authorized Servicenter, or damage that is attributable to acts of God.

LIMITS AND EXCLUSIONS

There are no express warranties except as listed above.

THE WARRANTOR SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING, WITHOUT LIMITATION, DAMAGE TO RECORDING MEDIA) RESULTING FROM THE USE OF THIS PRODUCTS, OR ARISING OUT OF ANY BREACH OF THE WARRANTY. ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE, ARE LIMITED TO THE APPLICABLE WARRANTY PERIOD SET FORTH ABOVE.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions or limitations may not apply to you.

This warranty gives you specific legal rights and you may also have other rights, which vary, from state to state. If a problem with this product develops during or after the warranty period, you may contact your dealer or Servicenter. If the problem is not handled to your satisfaction, then write to the Consumer Affairs Department at the Panasonic Consumer Electronics Company address above.

SERVICE CALLS WHICH DO NOT INVOLVE DEFECTIVE MATERIALS OR WORKMANSHIP AS DETERMINED BY THE WARRANTOR, IN ITS SOLE DISCRETION, ARE NOT COVERED. COSTS OF SUCH SERVICE CALLS ARE THE RESPONSIBILITY OF THE PURCHASER.

warvid 02/ 12/ 2001

Conexiones/Configuracion Inicial (PLUG & PLAY)

Favor realice la conexion de antena o cable antes de conectar el cordon de AC a la toma de pared.

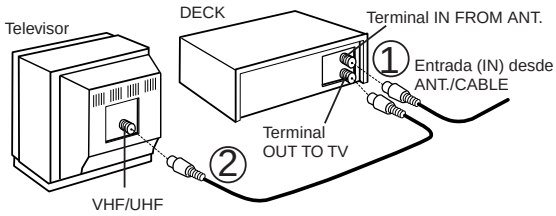
Conectando el cordon de AC de la DECK en toma de pared iniciara automaticamente la busqueda de canales y colocacion de tiempo.

Conectando

Para Ant/Cable-DECK-TV

① **Conecte Ant/Cable a la entrada de antena de la DECK (DECK In)**

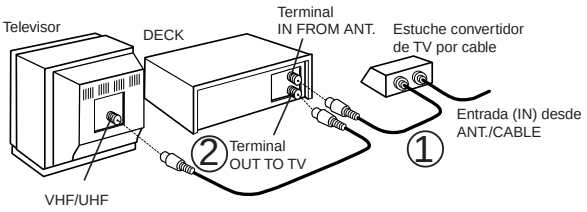
② **Conecte la salida de la DECK (DECK Out) a la entrada de antena de la TV (TV In) con el cable-accesorio RF incluido.**



Para Sistema Digital de Satelite (DSS)/ Convertidor de cable-DECK-TV

① **Conecte la salida del convertidor de cable a la "DECK In" con el RF cable accesorio incluido.**

② **Conecte "DECK Out" a la "TV In" con el cable-accesorio incluido.**



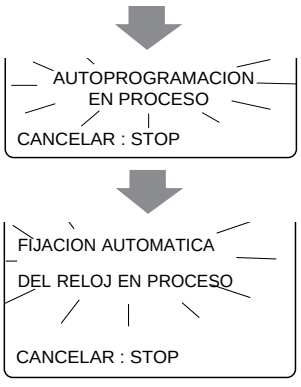
Realizando configuracion inicial

1 **Presione el boton DECK del control remoto para dicha modalidad. Encienda la TV y cambie a canal 3.**

2 **Conecte cordon de AC de la DECK a la toma de pared. La DECK se activara e iniciara busqueda de canales y colocacion de tiempo.**

- Si la pantalla abajo no aparece cheque la conexion DECK-TV y si la TV fue cambiada a el canal 3,trate cambiando a el canal 4.
- Para cambios a el canal de salida de la DECK favor hacer referencia a "VCR's Output Channel" (p. 19).

Conectando cordon de AC a la toma de pared.

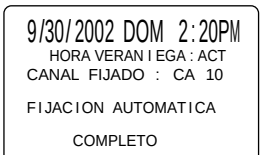


Si usa convertidor de cable solo enciendala y seleccione el canal PBS en su horario de uso u horario de zona. Si utiliza receptor DSS este debe estar apagado.

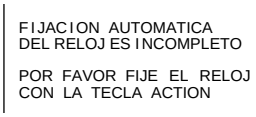
PRECAUCION

Si se sobre ajusta "NUT TYPE" el cable coaxial RF podria dañar las terminales de conexion. Ajusta ligeramente utiliza solo los dedos.

3 **Selecciones se realizaron automaticamente cuando la configuracion termino, esta pantalla aparece.**



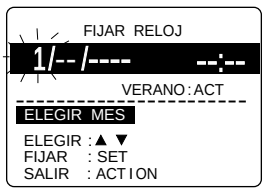
Si "Auto clock set is incomplete" aparece, coloque manualmente el tiempo, vealo abajo.



Realizando configuracion inicial

Si la colocacion de tiempo fue incompleta.

1 **Presione la tecla ACTION en el control remoto para visualizar la pantalla del menú RELOJ.**



2 **Presione ▲ ▼ para seleccionar el mes y ▶ para ajustar. De la misma forma, seleccione y ajuste la fecha, año, hora y DST (Hora de Verano).**

3 **Presione dos veces la tecla ACTION para poner el RELOJ en marcha y salir.**

Operaciones básicas para la reproducción

1 **Inserte un cassette**,
- La alimentación del DECK se activa. En la Pantalla de Visualización Multi Función se ilumina “VCR”.

2 **Presione PLAY** para reproducir el cassette.
- Si el cassette no tiene lengüeta de prevención de grabación (página 6), se inicia la reproducción automáticamente.

Detalles especiales durante la grabación

- **Presione FF/SLOW+** o **REW/SLOW-** para búsqueda de escenas hacia delante/ hacia atrás.
  Presione PLAY para liberar.
- **Presione PAUSE/STILL** para imagen Fija (Congelada).
  Presione PLAY para liberar.
- **Presione PAUSE/STILL** en el modo de imagen fija para imágenes cuadro a cuadro.
  Presione PLAY para liberar.
- **Presione FF/SLOW+** o **REW/SLOW-** en el modo de imagen fija para imágenes cuadro a cuadro. **Presione PLAY** para liberar.

3 **Presione STOP** para detener el cassette.

- **Presione REW/SLOW-** o **FF/SLOW+** en el modo de parada para rebobinado/avance rápido del cassette.
- **Presione EJECT** en el control remoto, o **STOP/EJECT** en el DECK para expulsar el cassette.

Operaciones básicas para la grabación

1 **Inserte el cassette con lengüeta de protección de grabación (pág. 6).**

2 **Presione CH ▲/▼,** o **las teclas de números** para seleccionar el canal.

3 **Presione SPEED** para seleccionar la velocidad de grabación (pág.6)
- SP = Reproducción estándar,
- LP = Larga duración,
- SLP = Superlarga duración.

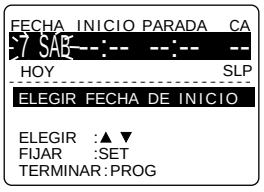
4 **Presione REC** para comenzar a grabar.
- Para eliminar escenas indeseadas, presione PAUSE/STILL para pausar, y al presionar nuevamente se reanuda la grabación.
- No podrá ver otro canal durante la grabación.

5 **Presione STOP** para detener la grabación.

Programación fácil para la grabación con temporizador

1 **Presione PROG** para visualizar PROGRAM.

2



1) Para ajustar la FECHA de grabación, presione ▲▼ para seleccionar:
1-31 = una vez, o
DIARIO = a la misma hora de lunes a viernes, o
SEMANA = a la misma hora cada semana y **presione SET** para ajustar.

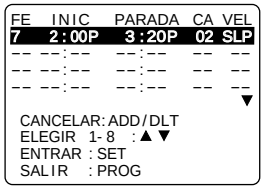
Orden para elegir

Ejemplo

Fecha de hoy — 7 → 8 → 9 ····· 31 → 1 → 2 ····· 6 → **▲/▼ Orden para elegir** → DIARIO → SEMANAL (LUN) ····· SEMANAL (SAB) → SEMANAL (DOM) → 7

2) Para ajustar los ítems que quedan, presione ▲▼ para seleccionar y **presione SET** para ajustar los tiempos de INICIO/ PARADA, CANAL, o entrada de LÍNEA (pág. 35), y velocidad del cassette (SP, LP, SLP).
Presione PROG para finalizar PROGRAM.

3



Presione ▲▼ para seleccionar un número que no está usando para ingresar mas programas y **presione SET** para ajustar.
Luego repita el paso 2.
O
Presione nuevamente PROG para salir.

- **Grabación de un toque** (grabar en marcha),

  Presione REC repetidamente para ajustar la hora de grabación (30 min - 4 horas).
  - La videograbadora termina la grabación a una hora programada.

Grabación normal → 0:30 → 1:00 → 1:30 → 2:00 → 3:00 → 4:00

Guía para rápida consulta

Operaciones básicas del DVD

1 **Presione *POWER*** en el control remoto o el aparato.

2 **Presione *DVD*** para seleccionar el modo DVD.

3 1) **Presione *OPEN/CLOSE***.
2) Ponga un disco en la bandeja de disco.
- Sujete el disco sin tocar ninguna de sus superficies, póngalo con el lado donde esté impreso el título hacia arriba, alinéelo con las guías y póngalo en su posición apropiada.

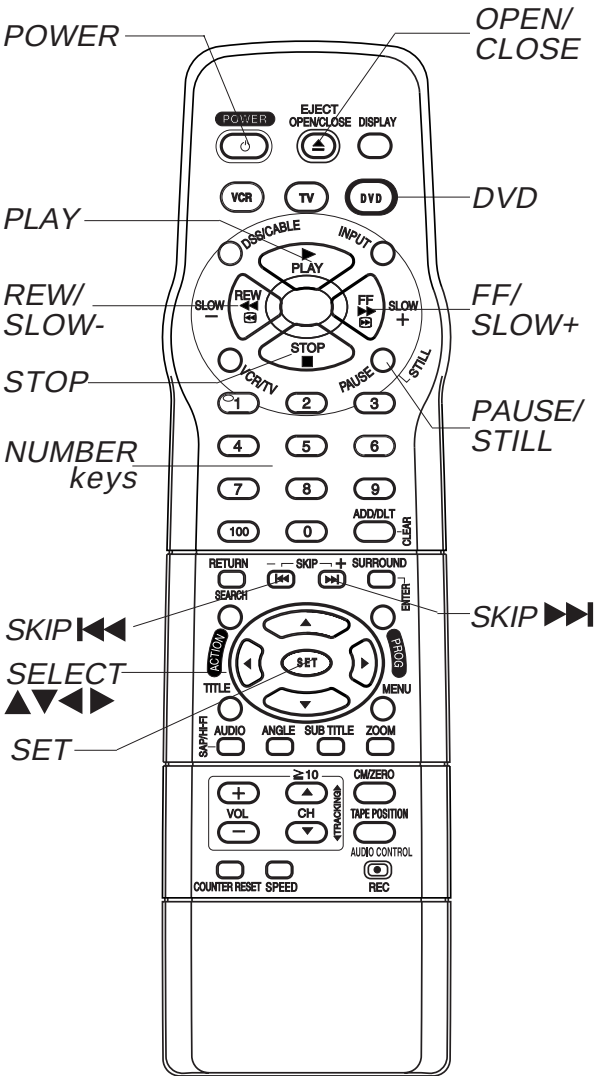
Disco de 3"(8 cm) Disco de 5" (12 cm)

4 **Presione *PLAY*** para iniciar la reproducción.
La bandeja del disco se cierra automáticamente.
- Si está usando un DVD interactivo (Interactive DVD) o un Vídeo CD con contol de reproducción (playback control) y aparece un menú de títulos (TITLE MENU) en la pantalla, siga al paso 5.

5 **Presione ▲▼◀ ▶** o las teclas numéricas para seleccionar el artículo deseado.
Presione *SET* para la reproducción.
Si usa las teclas numéricas, la reproducción comienza automáticamente.

6 **Presione *STOP*** para parar la reproducción.

7 **Presione *OPEN/CLOSE*** para expulsar el disco.



■ Para buscar una escena particular

Búsqueda hacia adelante
Presione *FF/SLOW+* en el modo de reproducción.

Búsqueda hacia atrás
Presione *REW/SLOW-* en el modo de reproducción.
(Para liberar, **presione *PLAY***)

■ Para saltar un capítulo o una pista

Salto hacia adelante
Presione *SKIP* ▶▶I en el modo de reproducción.
Un capítulo (DVD) o una pista (Vídeo CD/CD) se salta cada ves que se oprime la tecla.

Salto hacia atrás
Presione I◀◀ *SKIP* en el modo de reproducción.

■ Para ver una imagen fija

Presione *PAUSE/STILL* durante la reproducción.
(Para liberar, **presione *PLAY***)

■ Para ver imágenes cuadro a cuadro

(DVD/Vídeo CD)
Presione *PAUSE/STILL* en el modo de imagen fija.
La imagen avanza un cuadro cada vez que presiona la tecla.
(Para volver a la reproducción normal, **presione *PLAY***.)

■ Para ver en cámara lenta (DVD/Vídeo CD)

Presione *FF/SLOW+* o ***REW/SLOW-*** en el modo de imagen fija.
(Para liberar, **presione *PLAY***)

Por ayuda llame al 1-800-211-PANA(7262) o envie e-mail a : consumerproducts@panasonic.com

Funcionnamiento del DVD utilizando visualizaciones en pantalla

Cuando se presiona DISPLAY, la visualización en pantalla muestra la información del disco (título / capítulo / número de lista, tiempo transcurrido de reproducción, audio / idioma del subtítulo, y ángulo) e información (repetir la reproducción, modo reproducción, Karaoke vocal encendido / apagado, etc.).

1 **Presione *DISPLAY*** en el modo reproducción o parada para visualizar Visualizaciones en pantalla.

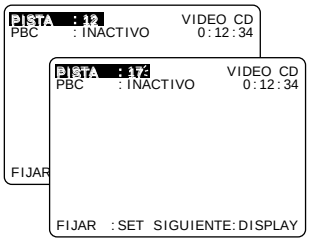
- Cada vez que se **presione *DISPLAY***, la visualización en pantalla cambia como se muestra a continuación.

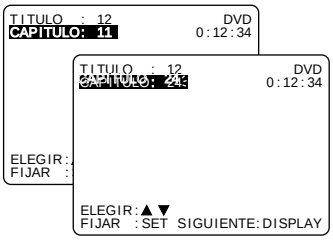
Información seleccionada del disco
↓
Información seleccionada de del DECK
↓
Pantalla normal

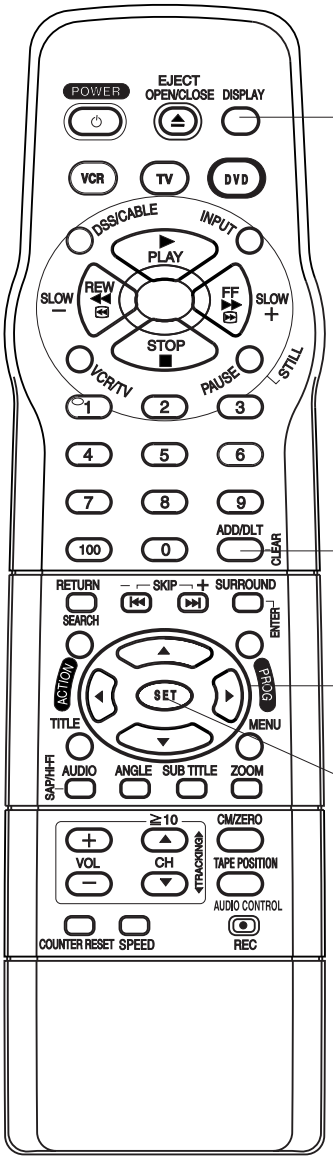
2 **Presione ▲▼** (o ◀▶) para seleccionar el ítem deseado.
Presione *SET* para ajustar.

3 **Presione ▲▼** para seleccionar el ajuste deseado.
Presione *SET* para ajustar.

Para volver a la pantalla normal,
Presione repetidamente ***CLEAR*** o ***DISPLAY***.







DISPLAY
CLEAR
SELECT ▲▼◀▶
SET

Spanish Quick Use Guide/ Guía para rápida consulta

Fijaciones iniciales

1 **Presione DVD** para seleccionar el mode DVD.

2 **Presione ACTION en el modo de parada** para visualizar MENU.

3 **Presione ▲▼** para seleccionar el artículo deseado.
Presione *SET*.

IDIOMAS DEL DISCO
Todos los idiomas ofrecidos en el disco pueden ser ajustados, Si el idioma ajustado no es ofrecido en el disco, se seleccionará el idioma original del disco.

SALIDA DE AUDIO
Puede usted ajustar la salida audio procedente del terminal de salida audio digital.

DETENER RASTREO
Para seleccionar “CAMPO” o “CUADRO fijo” para prevenir inestabilidad o para permitir ver textos pequeños o patrones finos claramente en el modo de imagen fija.

PREFERENCIA
Para seleccionar si el material del vídeo para pantalla ancha será vuelto a reproducir en el estilo Pan&Scan, en el estilo Letterbox o en el estilo 16 : 9 en la pantalla.

4 **Presione ▲▼** para seleccionar el artículo deseado.
Presione *SET*.

5 **Volver a visualizar el menú de DVD para continuar el ajuste.**

Presione *ACTION* y pase al paso 3 para ajustar otro ajuste o, para salir, **presione *ACTION*** tres veces.

Selección de IDIOMAS DEL DISCO [DVD solamente]

Seleccione “AUDIO”
(Fijación de fábrica : inglés)
Inglés / Español / Francés :
Originl : Se seleccionará el idioma original de cada disco.
OTRO ** :** Se puede seleccionar el otro idioma.

Seleccione “SUBTITULO”
(Fijación de fábrica)
AUTO : Se seleccionará el mismo que fue seleccionado en la preparación de “AUDIO”.
- Si el idioma seleccionado en la preparación de “AUDIO” se utiliza durante la reproducción, los subtítulos no aparecerán.
- Si se utiliza otro idioma durante la reproducción, los subtítulos aparecerán en el idioma seleccionado en la preparación de “AUDIO”

Inglés / Español / Francés :
OTRO ** :** Se puede seleccionar el otro idioma.

Seleccione “MENU”
(Fijación de fábrica : inglés)
Inglés / Español / Francés :
OTRO ** :** Se puede seleccionar el otro idioma.

Cambio del idioma de subtítulos [DVD solamente]

El idioma de los subtítulos seleccionado al hacer las fijaciones iniciales se puede cambiar por otro idioma diferente, si éste se encuentra disponible.

1

Presione *SUBTITLE* durante la reproducción. Cuando no haya subtítulos grabados, “-” se visualizará en lugar del número de idioma.

2

Presione ▲▼ para seleccionar el idioma deseado.

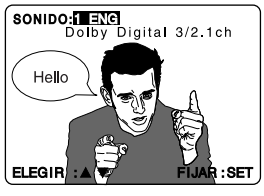
Presione ► (o ◄) para ajustar.

Presione ▲▼ para seleccionar “ACTIVO” o “INACTIVO.”

Cambio del idioma de la pista de sonido [DVD solamente]

El idioma de la pista de sonido seleccionado al hacer las fijaciones iniciales se puede cambiar por otro idioma diferente, si éste se encuentra disponible.

1



Presione *AUDIO* durante la reproducción para visualizar la pantalla AUDIO.

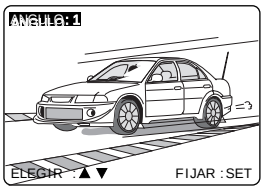
2

Presione ▲▼ para seleccionar idioma.

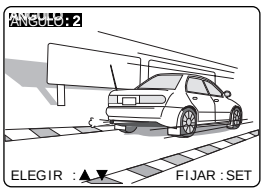
Por ayuda llame al 1-800-211-PANA(7262) o envie e-mail a : consumerproducts@panasonic.com

Visión desde otro ángulo [DVD solamente]

Algunos discos DVD tienen escenas que han sido filmadas simultáneamente desde un número de ángulos diferentes. Con estos discos, la misma escena podrá verse desde cada uno de estos ángulos diferentes utilizando el botón ANGLE.

1 

Presione *ANGLE* durante la reproducción para visualizar la pantalla de ángulo.

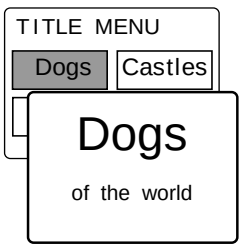
2 

Presione ▲▼ para seleccionar el ángulo deseado.

Utilización de un menú de títulos [DVD solamente]

Algunos discos con películas, por ejemplo, vienen con dos o más títulos. Si el disco tiene un menú de títulos grabados, el botón TITLE podrá utilizarse para seleccionar el título de la película.

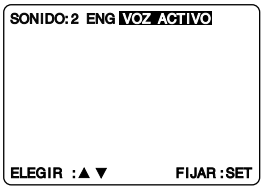
1 **Presione *TITLE* durante la reproducción.** Ahora se visualiza una lista de los títulos del disco.

2 

Presione ▲▼ ◀ ▶ o **las teclas de números** para seleccionar el título deseado.
Presione *SET*.

Selección de vocal para los discos de Karaoke [DVD/Video CD]

1 **Presione *AUDIO*** durante la reproducción para visualizar la pantalla AUDIO.

2 

Presione ▲▼ (o ◀ ▶) para seleccionar el ajuste deseado.

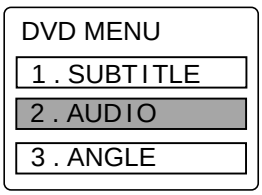
Presione ▶ (o ◀) para ajustar. (DVD solamente)

- DVD Karaoke (1 vocal) VOCAL ON ↔ VOCAL OFF
- DVD Karaoke (2 vocals) VOCAL V1 + V2 → VOCAL V1 → VOCAL V2 → VOCAL OFF
- Video CD LR → L → R

Utilización de un menú de DVD [DVD solamente]

Algunos discos DVD tienen estructuras únicas de menús llamadas menús DVD. Por ejemplo, los DVDs programados con un contenido complejo proporcionan menús guía, y los grabados con varios idiomas proporcionan menús para audio e idiomas de subtítulos. Aunque los contenidos de los menús DVD y la operación cambian de disco a disco, a continuación se explica la operación básica cuando se utiliza esta característica.

1 **Presione *MENU*** durante la reproducción. El menú de DVD introducido en el disco se visualiza ahora.

2 

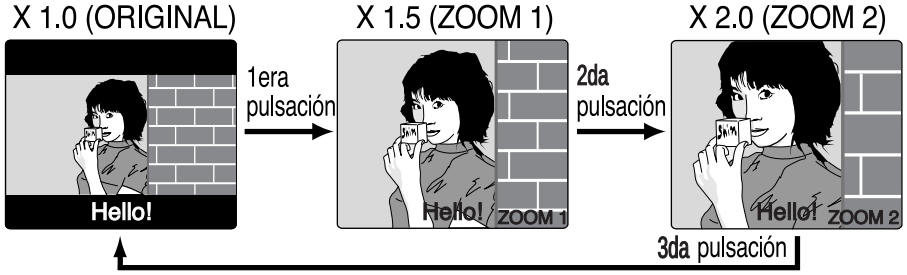
Presione ▲▼ ◀ ▶ o **las teclas de números** para seleccionar el ítem deseado.
Presione *SET*.

Ampliación de la imagen [DVD solamente]

Durante la reproducción de un DVD, puede ampliar partes específicas de una imagen y seleccionar la relación de zoom usando el botón ZOOM.

Presione *ZOOM* repetidamente para cambiar el tamaño de la imagen como se indica a continuación:

■ Use los botones ▲, ▼, ◀ y ▶ para desplazar la posición hacia arriba, hacia abajo, hacia la izquierda o hacia la derecha.



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1. **Important safety notice**
   Components identified by the sign ⚠ have special characteristics important for safety. When replacing any of these components. Use only the specified parts.

2. Do not use the part number shown on this drawing for ordering.
   The correct part number and part value is shown in the parts list, and may be slightly different or amended since this drawing was prepared.

3. Use only original replacement parts:
   To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.

4. Parts different in shape or size may be used.
   However, only interchangeable parts will be supplied as service replacement parts.

5. Test point information
   ⓘ :Test point with a jumper wire across a hole in P.C.B.
   ▭→ :Test point with a component lead on the foil side.
   ⊘ :Test point with no test pin.
   ● :Test point with a test pin.

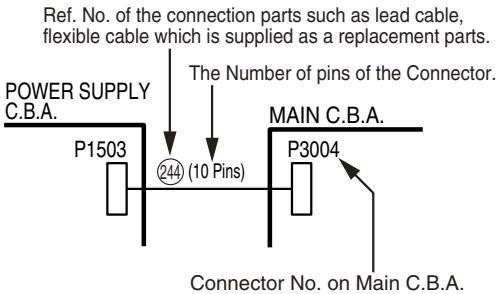
Schematic Diagram Notes

1. Indication for Zener Voltage of Zener Diodes
   The Zener Voltage of Zener Diodes are indicated as such on Schematic Diagrams.

   Example:
   (6.2V).....Zener Voltage

2. How to identify Connectors
   Each connector is labeled with a Connector No. and Pin No. Indicating what it is connected to,
   in other words, its counter part.
   Use the interconnection schematic diagram to find the connection between associated connectors.

   Example:
   The connections between C.B.A.s are shown below.


Ref. No. of the connection parts such as lead cable, flexible cable which is supplied as a replacement parts.
The Number of pins of the Connector.
POWER SUPPLY C.B.A.
MAIN C.B.A.
P1503
244 (10 Pins)
P3004
Connector No. on Main C.B.A.

3. Parts marked "PT" are not used in any models included in this service model.

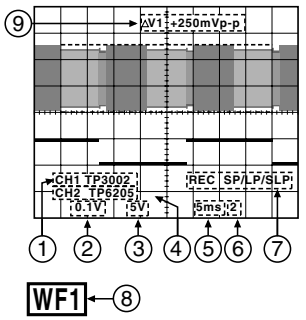
   Example: C6011 100P PT | C6011 PT | R6097 PT

4. The part number shown on this drawing is only main part number, except for safety parts. Be sure to make your orders of replacement parts according to the parts list.

5. Jumper wires are used for WA10, WA5 etc and these are not supplied as replacement parts.

Signal Waveform Note

How to read Signal Waveform



① Connecting Point
② Volts/Div
③ Volts/Div
④ Connecting Point
⑤ Time/Div
⑥ Trigger Channel of the scope
(1:CH1,2:CH2)
⑦ Operation Mode of VCR
⑧ Waveform Point on Schematic
⑨ ΔV1:Peak to Peak

Voltage Chart Note

Voltage Measurement
a. Color bar signal in SP mode.
b. ---:Unmeasurable or not necessary to measure.

Circuit Board Layout Note

Circuit Board Layout shows components installed for various models.
For proper parts content for the model you are servicing, please refer to the schematic diagram and parts list.

NOTE:
Circuit Board Layout includes components which are not used.